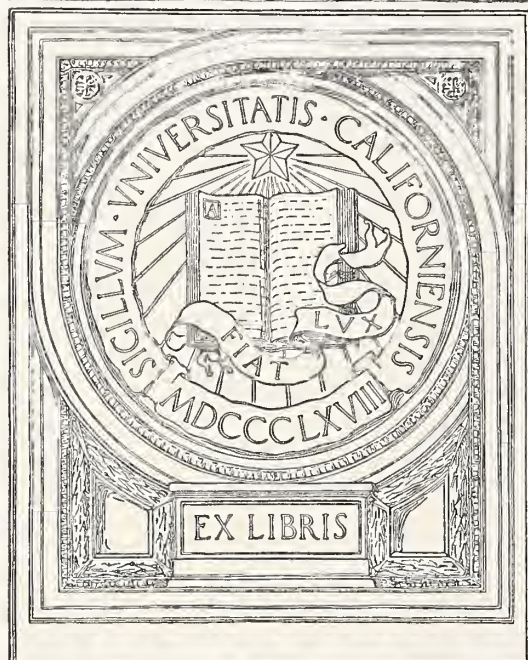



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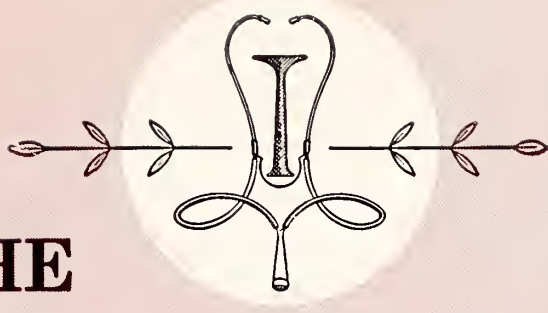


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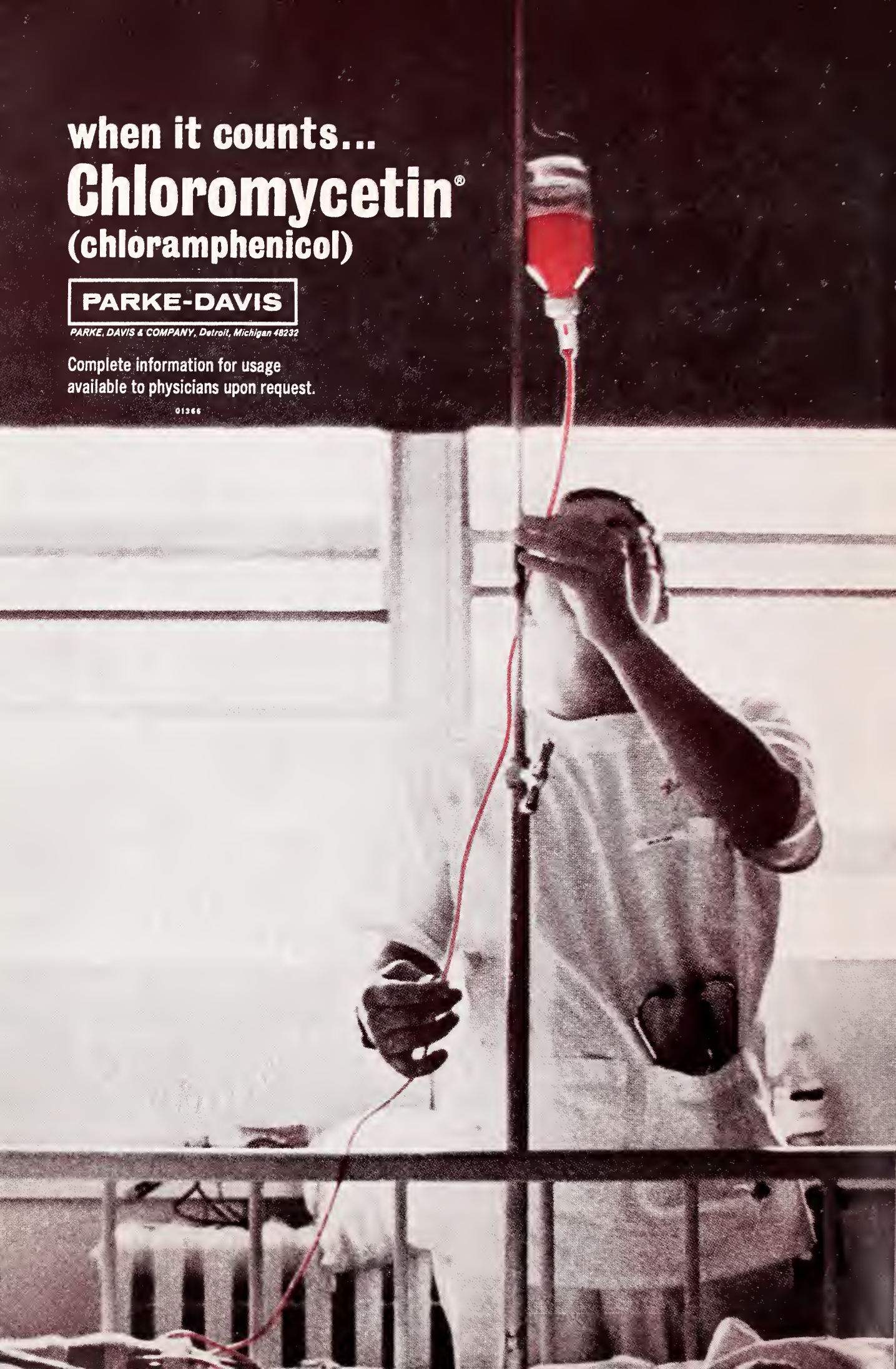
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The JOURNAL of the KANSAS MEDICAL SOCIETY

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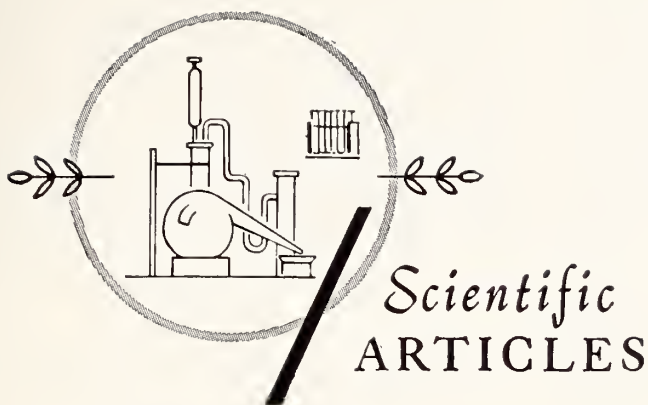
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Colostomy Problems—

The Patients' Viewpoint

**NINA BAIRD and DALE CORBIN in collaboration with
ALFRED M. TOCKER, M.D., HENRY J. BIERMANN, M.D. and
LILIA RODRIGUEZ TOCKER, M.D., Wichita***

THE WICHITA COLOSTOMY AND ILEOSTOMY ASSOCIATION (WCIA) originally organized in 1957 with a membership of six. Its membership now numbers more than 85, and it is a charter member of the United Ostomy Association, Inc. It is the only Colostomy and Ileostomy Association in Kansas. In fact, the closest similar ostomy groups are in St. Louis and Chicago. Only persons with a colostomy or an ileostomy qualify for membership. It is a lay organization, and is not intended to practice medicine. The purpose of this Association is to be of assistance to persons having a colostomy or an ileostomy:

1. By facilitating their adjustment to the colostomy or ileostomy.
2. By promoting an understanding of the problems by their family.
3. By being of assistance to medical and nursing personnel in their care of patients with a colostomy or

- an ileostomy by visiting these patients as requested.
4. By exchanging information in group discussion and in educational lectures of invited speakers.
5. By making available to the medical profession and

The Colostomy and Ileostomy Association of Wichita conducted a questionnaire survey among members of organized ostomy groups in nine states. The questionnaire was divided into five general headings: general information, information regarding the pre-surgical, surgical and post-surgical periods, and present stomal care. Ninety-two colostomates and 107 ileostomates replied.

This paper reports the replies received from the colostomy group.

* Presented at the annual meeting of the Kansas Division of the American Cancer Society in Wichita October 1, 1966. Mr. Dale Corbin is President and Nina Baird is Visiting Chairman of the Wichita Colostomy and Ileostomy Association which conducted this survey.

This project was supported by grants from the Leo McGuire Research Foundation of Wichita, Kansas (through contributions of the Xi Tau Chapter of the Beta Sigma Phi Sorority) and by the American Cancer Society.

to members the latest information obtained on appliances, cements, powders, and other products used by ostomy patients.

In 1965 the C&I Association of Wichita, in furtherance of the aims of this association, sent a standard questionnaire to 250 ostomates. Those contacted

were members of seven colostomy and ileostomy clubs, and lived in 16 states. Ninety-two colostomates and 107 ileostomates replied to the questionnaire. The survey concerned patients' viewpoints and solutions of the psychological, functional and physical problems attending their surgery.

This paper is a report on this statistical survey concerning problems of the colostomy patients only.*

Pre-Surgical Period

Most colostomies were necessitated by distal malignancies of the intestinal tract, and approximately 80 per cent of those answering the questionnaire were 50 years of age or older at the time of their surgery (*Table 1*). An appalling 14 per cent were not

TABLE 1	
AGE AT SURGERY	
	Per Cent
1-20 yrs.	0.0
21-35 yrs.	2.2
36-50 yrs.	18.5
51-65 yrs.	50.0
Over 65 yrs.	29.3

informed, or did not understand, that their operation would put their "bowels on the outside" on their abdomen. (The vast majority, 84 per cent, had their stoma on the left side.) Twenty per cent felt their doctors had only partially explained the type of surgery they were to undergo, and only 66 per cent felt the surgery had been fully explained to them pre-operatively. Two thirds (66 per cent) felt they should have been told more, while 29 per cent felt they should not have been told more.

Post-Surgical Period

Thirteen per cent did not consider their hospital nursing care satisfactory, 83 per cent did feel their nursing care was adequate, and 4 per cent were undecided. Thirty-eight per cent felt they did not leave the hospital with full knowledge of self care of their colostomies, while 62 per cent felt they did have satisfactory instruction in this regard at the time of their discharge.

After surgery, colostomy care was usually relegated to hospital and surgical supply house personnel who oftentimes were inadequate. Among the patients who sought information from sources other

* A separate report has been made regarding this statistical survey concerning problems of the ileostomy patients.

than their physicians, often going to several sources, the colostomy patients checked with nurses, other colostomy patients, or popular published materials in about equal measure (*Table 2*). Thirty per cent indicated that, other than their physicians, they had no other source of information.

This survey indicated on the whole that the nursing profession needs to become better informed about the care of a colostomy.* Physicians also are derelict

TABLE 2	
SOURCE OF COLOSTOMY INFORMATION	
(other than physicians)	
Source	Per Cent
Nurses	30
Other Colostomates	30
Books and pamphlets	30
Other sources (Friends, magazines, etc.)	7
None	30

(Note: The percentages are over 100 per cent because many respondents gave more than one answer.)

in this respect in many cases. Many of the colostomates replied that they had to re-vamp, in some instances completely, habits and ideas taught them while in the hospital. Local ostomy clubs were a source of assistance and encouragement to new colostomates. These patients were often depressed and their morale, more often than not, was low especially in the immediate postoperative period.

Irrigation of Colostomy

Ten per cent of those replying stated their doctor had said nothing about irrigation of the colostomy. In 90 per cent of the cases the doctor had advised irrigation, instructions in this procedure having been given by the nurse (56 per cent), the doctor (29 per cent) or another colostomate (15 per cent). This is in marked contrast to the practice in Europe where irrigation is hardly ever practiced. Most of the colostomates (62 per cent) irrigated daily, while 27 per cent irrigated every other day, 8 per cent every three to seven days, and 3 per cent only occasionally. Approximately half (52 per cent) required an hour or more to irrigate their colostomy—38 per cent reporting they required an hour's time and 14 per cent stating they required one and one-half hours or more.

* Currently Wichita hospitals regularly schedule seminars in all phases of ostomy care for student nurses, licensed practical nurses, and nursing groups. Teaching aids, demonstrations, and lecturers are furnished by the WICA.

Twenty-four per cent, however, reported irrigation required only half an hour or less, and a similar number estimated the time required to be 45 minutes. The average amount of liquid used for irrigation was about two quarts. Many of the colostomates used a rubber baby bottle nipple as part of their irrigating armamentarium (*Figure 1*). A lubricated catheter is passed through a small hole cut in the end of a nipple which is held firmly against the stoma. This prevents premature reflux of the irrigant, and once the desired amount of irrigant is taken, the catheter and nipple are removed.

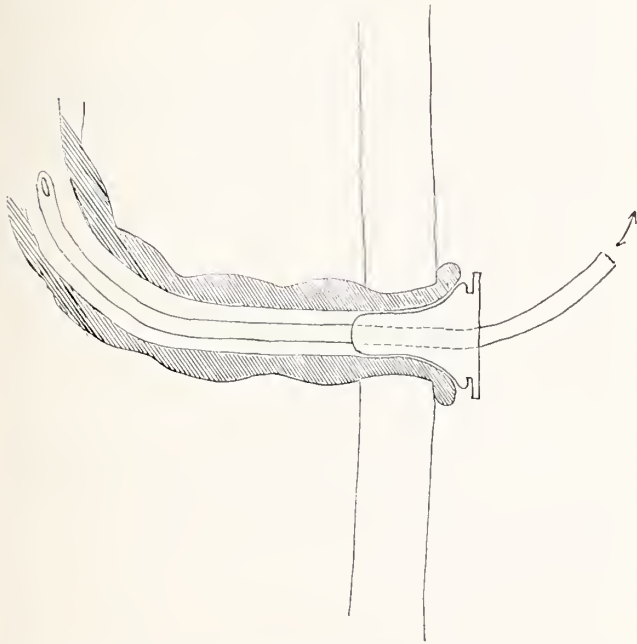


Figure 1. Method of Using Rubber Nipple to Irrigate Colostomy. A lubricated catheter is passed through a small hole cut in the end of a nipple which is held firmly against the stoma. This prevents premature reflux of the irrigant, and once the desired amount of irrigant is taken, the catheter and nipple are removed.

prevents premature reflux of the irrigant, and once the desired amount of irrigant is taken, the catheter and nipple are removed.

Dilatation of Colostomy Stoma

Almost half (44 per cent) of the doctors said nothing about dilating the colostomy stoma. Dilatation was advised by the doctor in 56 per cent of the cases, and 44 per cent of these dilated daily, 16 per cent every other day, 10 per cent every third day, 8 per cent weekly, and 22 per cent occasionally.

Wearing of Colostomy Appliances

Most colostomates, especially those who irrigated daily or every other day, required only a small pad over the colostomy stoma between irrigations. Only 38 per cent of the colostomates wore an appliance at all times. Seventy-seven per cent of these continued

to use the first appliance recommended to them, stressing the importance of the initial recommendations and instructions. About half the appliances used were permanent and half were disposable.

Colostomy Complications and Problems

Colostomy complications ranged from none to single or multiple (*Table 3*). On the whole colostomy complications were by far less frequent and less serious than ileostomy complications. Nevertheless, this impressive list of complications and the high percentage of patients affected signifies that creation of a ventral "anus" is no simple solution in itself. Twenty-nine per cent of the colostomates who had complications required hospitalization for these

TABLE 3
COLOSTOMY COMPLICATIONS

	Per Cent
Obstruction	18
Abscesses	10
Granulations	7
Hernia	5
Stenosis	3
Prolapse	2
Retraction	2
Adhesions	1
Other	1
None	51

complications. Interestingly, the complications appeared within the first three months after surgery, and then declined in incidence until about 12 months had elapsed, after which there was a second rise in the incidence of complications.

Common colostomy problems reported included skin, diarrhea, constipation and gas problems (*Table 4*). Most of these problems responded to general and specific diet regulations. On the whole, colostomates required few, if any, diet limitations as compared with their preoperative status.

Discussion

The results of this questionnaire survey among 92 colostomates reveal that, although it is felt that the surgeon capably performs the surgery itself, the patient is often ill-informed preoperatively regarding the type of surgery he is to undergo, and postoperatively regarding the care and problems associated with colostomy surgery. Local ostomy clubs were a source of great technical assistance and psychological encouragement to the new colostomates.

TABLE 4

COMMON COLOSTOMY PROBLEMS

	Yes PER CENT	Occasionally PER CENT	No PER CENT
Skin problems	13	34	44
Diarrhea problems . .	19	39	42
Constipation problems	12	22	66
Gas problems	22	34	44

This survey indicated on the whole that the nursing profession needs to become better informed about the care of a colostomy, and physicians are also derelict in this respect in many cases. Both physicians and nurses should be acquainted with all the facts necessary in the rehabilitation of the patient in order to be able to maintain the morale of the patient and give constructive suggestions whenever the patient needs them.

The patient should understand that a colostomy is a colostomy—an inconvenience (at times) but not a catastrophe. A return to a very acceptable normal way of life is possible in almost all cases.

The medical profession, doctors and nurses, should be aware of the existence of ostomy groups which can help the patient pre-operatively and certainly postoperatively, bridging the gap between release from hospital care and their return to job and family. The Colostomy and Ileostomy Association extends help and friendliness, when requested, to all colostomy patients who need it, helping with their common problems, leaving the major medical problems to their physicians.

Addendum

At the annual meeting of the Kansas Division of the American Cancer Society in Wichita October 1, 1966, local units were urged to encourage the formation of local Colostomy and Ileostomy groups and help secure the services of members of such groups when requested by physicians. The Wichita Colostomy and Ileostomy Association offers its cooperation in the formation of such groups and in the solution of individual patient problems. Any inquiries regarding the above may be addressed to Mr. Dale Corbin, president of the Wichita C&I Association, 3623 Mossman, Wichita, Kansas.

DEFENSIVE DRIVING

In the era of steadily increasing auto accidents with their consequent deaths and injuries, the safety experts have coined a new phrase to help us survive in traffic—"defensive driving."

What is defensive driving?

Basically, it is keeping full control of your car at all times, so that you can avoid an accident no matter what the other fellow does.

Some of the fundamentals of defensive driving are outlined in *Today's Health*, the magazine of the American Medical Association.

- Never "tailgate." This practice of following too closely the vehicle ahead has been found to be a common cause of accidents. Stay back one car length for each 10 miles of speed.
- When you have a driver tailgating you, slow down and encourage him to pass.
- Expect the driver ahead of you to brake without warning. Watch especially for situations which will cause him to slow down or stop.
- Stop smoothly and gradually when there is a vehicle behind you. Signal your intentions of stopping, slowing down, or turning.
- Look to the left, look to the right when approaching an intersection. Never assume the other driver will yield the right-of-way, even if you have the green light.
- When in doubt, never pass. Before you change lanes check your rearview mirror and glance to be sure your blind spot is clear. Use your turn signals when passing. Make certain someone behind you is not trying to pass you at the same time. When passing, sound horn or flick your lights to let the driver ahead know. Accelerate and pass quickly. Get back quickly after you can clearly see the car in your rearview mirror.

The expert driver follows some basic common-sense rules, *Today's Health* says.

- He keeps his eyes moving, thus avoiding eye-holding situations while his car moves blindly into an accident-producing situation.
- The expert takes in the whole picture. He trains himself to scan the entire driving scene for a full city block or a half mile on rural roads.
- The expert leaves an out for himself by maintaining a "space cushion" for maneuvering.
- The expert signals others his intentions early while he still has time and space to avoid them if they do not respond.—*AMA Health and Safety Tips*.

Conn Syndrome

Reversible Glucose Intolerance and the Sodium Escape Phenomenon

DANIEL HOLLANDER, M.D., and

ROBERT T. MANNING, M.D., *Kansas City, Kansas**

CONN, IN 1955, first described primary hyperaldosteronism in a patient with hypertension, hypokalemia, and alkalosis.¹ Since then, about 145 patients with primary hyperaldosteronism have been reported² and it is apparent that the syndrome encompasses more than the few original characteristics. Recently, attention has been focused on impaired carbohydrate tolerance in hyperaldosteronism³ and the curious phenomenon of escape from the sodium retentive effect of aldosterone.⁴

We have studied a patient with primary hyperaldosteronism demonstrating many of the ill-defined manifestations of hyperaldosteronism. These observations emphasize the need for continued investigation of the multiple metabolic interrelationships present in this disorder.

Case Report

D. C., a 42-year-old woman, entered the University of Kansas Medical Center for evaluation of hypertension. Eight years previously she first learned that her blood pressure was elevated but received no treatment. In May, 1965, she became weak and unable to do her housework.

Physical examination on admission to the University of Kansas Medical Center revealed a lethargic, slow, edematous woman. Blood pressure was 200/120 supine and erect. Strikingly, the pulse rate remained between 40-50 per minute during multiple determinations. Funduscopic examination revealed minimal arterio-venous nicking and tortuosity of the arterioles. There was no cardiomegaly. No masses were palpable in the abdomen. One plus pitting edema of both ankles was present. Serum electrolyte determination showed sodium of 145 mEq, potassium of 2.1 mEq, chloride of 88 mEq, and bicarbonate of 45 mEq per liter.

She was transferred to the Clinical Research Center where a constant diet containing 132.8 mEq of sodium,

74.9 mEq potassium, 34 mEq calcium, 1341 mEq phosphate and 26 mEq magnesium per day was begun. Selected laboratory findings from this period are shown in *Tables 1* and *2*. Following the first nine days of balance studies, the results of which are shown in *Table 3*, she underwent a laparotomy. The right adrenal was normal, but a 3.0 cm, round, yellow-orange encapsulated mass was found on the superior pole of the left adrenal which was removed

A patient with an aldosterone-producing adrenal adenoma is described. She demonstrated reversibility of glucose intolerance associated with this disease and was shown to be in negative sodium balance preoperatively in spite of high aldosterone production. The possible mechanisms involved in the paradoxical sodium escape phenomenon are reviewed and discussed. Attention is also called to the reversible bradycardia found in this patient, a finding not previously described.

together with half of the left adrenal gland. Histologically, the tumor consisted of large cells with vacuolated cytoplasm and small vesicular nuclei. No mitotic figures were seen (*Figure 1*). By the seventh postoperative day, the patient's blood pressure had decreased to 130/80. She then returned to the Clinical Research Center where balance studies were repeated, the results of which are shown in *Table 4*. Results of a glucose tolerance test, and determinations of serum electrolytes and 24-hour urinary aldosterone performed three months after the operation are shown in *Tables 1* and *2*. Her blood pressure five months after the operation has remained at the range of 130/80 to 135/85. She is now working and feeling well.

Discussion

In an analysis of 145 cases of primary aldosteronism by Conn and co-workers² and of 34 cases by

* From the Department of Internal Medicine, University of Kansas Medical Center. Dr. Hollander is a second year Resident in Internal Medicine, and Dr. Manning is an Associate Professor of Internal Medicine and Biochemistry.

Supported in part by Clinical Research Center project No. 65-39.

TABLE 1
SELECTED LABORATORY FINDINGS

	Sodium	Potassium mEq/liter	Chloride	Bicarbonate	Aldosterone mcg/24 hr. urine
Preoperatively	145	1.9	88	45	32
Postoperatively	138	5.6	104	24	3

TABLE 2
PRE AND POSTOPERATIVE GLUCOSE
TOLERANCE TESTS

	Fasting	1 hr.	2 hrs.	3 hrs.	4 hrs.
		mg/100 ml			
Preoperatively	78	198	149	100	59
Postoperatively	82	116	68	84	72

Manning and co-workers⁵ the most common symptoms were muscular weakness, polyuria, polydypsia, and headaches. The most common physical findings were hypertension, retinopathy, and cardiomegaly. Curiously, our patient showed a persistent slow resting pulse. Search of the world literature revealed no other patient with bradycardia associated with hyperaldosteronism. Following the operation her pulse rate returned to normal. The mechanism accounting for the reversible bradycardia is not understood. Reduced tolerance to glucose in patients with hyperaldosteronism is reported by Conn.³ In his series,

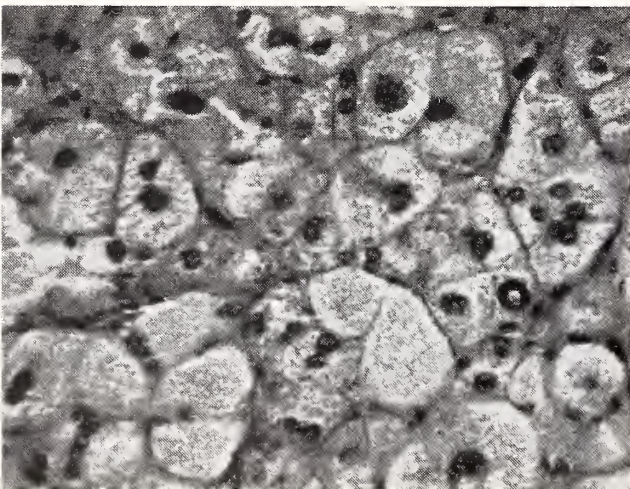


Figure 1. Histologic appearance of adrenal adenoma showing large cells with vacuolated cytoplasm and small vesicular nuclei (Hematoxylin and eosin stain $\times 450$).

52 per cent of 34 patients investigated were found to have a diabetic glucose tolerance curve. Sagild, *et al.* conducted a study on normal men who were on a constant metabolic diet to which potassium exchange resin was added. These men showed a decreased tolerance to glucose after depletion of 500 milliequivalents of potassium and before serum potassium changes appeared. Conn, *et al.*³ demonstrated by plasma insulin assays that potassium depletion depresses the production of insulin by the pancreatic beta-cells. Our patient demonstrated complete reversal of decreased glucose tolerance following her operation (Table 2). This coincided with return to normal of serum potassium level. As can be seen from the preoperative balance studies (Table 3), our patient could not achieve a positive sodium balance in spite of high aldosterone output. August, *et al.* showed in normal humans that administration of a potent mineralocorticoid is followed by renal retention of sodium for the first five days. However, on the fifth day "renal escape" from the salt retaining effect of the hormone occurs.⁷ Rouner, *et al.* performed similar studies on patients with hyperaldosteronism and showed that the renal escape phenomenon is not related to changes in blood pressure, glomerular filtration rate, extracellular fluid volume, renal blood flow or plasma volume. Therefore, two mechanisms are postulated to explain the renal escape phenomenon. Hypokalemic nephropathy may cause the renal tubules to become refractory to aldosterone-induced sodium retention, or an unknown humoral mechanism may be activated

TABLE 3
PREOPERATIVE BALANCE PERIOD (FEB. 15-
FEB. 24) WITH POTASSIUM LOADING

	Na mEq.	K mEq.	Ca mEq.	P mg.	Mg mEq
Intake	901	1703	378	11604	249
Output	1102	1190	516	11946	281
Balance	-201	+513	-138	-342	-32

TABLE 4
POSTOPERATIVE BALANCE PERIOD
(MARCH 10-MARCH 19)

	Na mEq.	K mEq.	Ca mEq.	P mg.	Mg mEq.
Intake	950	720	300	11340	264
Output	1225	543	335	11071	257
Balance	-275	+177	-35	+269	+7

to induce tubular excretion of sodium despite the presence of increased aldosterone secretion.

Reprint requests: Robert T. Manning, M.D., University of Kansas Medical Center, Rainbow Boulevard at 39th Street, Kansas City, Kansas 66103.

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HOW TO DISSERVE THE PUBLIC

No one can deny that the provisions of the Federal Food, Drug and Cosmetic Act and its Amendments are in the public interest and promote drug safety to a degree not surpassed anywhere in the world. But it must be recognized—and this I cannot stress too strongly—that the provisions of these drastic and far reaching amendments should be administered in a scientific and flexible manner. An overly strict interpretation and application of the legal and regulatory language of the recent Amendments could stifle the development and production of new drugs. To regulate the production and use of drugs by responding to pressure groups and to the whim and fancy of biased and overly critical individuals whether lay or scientific, would be a disservice to the public.—Joseph F. Sadusk, Jr., M.D., to American College of Physicians, New York, April 19, 1966.

Aerospace Medicine

Ours and Theirs

MAJOR GENERAL DON C. WENGER,* USAF, MC, *Andrews AFB, Washington*

THE AIR FORCE SYSTEMS COMMAND does most of the research and development that is done in the military in the field of space medicine. We manage research, both in-house (that is within the command), and out-of-house, that is contracts for research. These contracts may go to industry, to private laboratories, or to universities. Eighty-five per cent of our Systems Command people who are doing or monitoring the research and development, which is so important to our country and its safety, have advanced degrees.

As we speak about space medicine we must realize that we speak about both men and hardware. Our command develops new systems and improves and modifies old ones, but the Deputy Chief of Staff, Bioastronautics and Medicine deals with an old system which is unimproved and unmodified, that is man.

The Aerospace Medical Division is one of the divisions of the Air Force Systems Command. The major task of this division is to determine ways and means of using the valuable and undoubted capabilities of man as part of the various systems devised for the use and protection of our country.

The human is the heart of the nation's space program and this heart must be kept functioning. Some physiologic problems associated with putting and keeping man in space are beginning to appear. Let's speak briefly of some of them and start with the phenomenon of deconditioning. This is the word now used instead of orthostatic intolerance. Although this occurs and occurs rapidly in space crews, it is so far impossible to determine anything basically different from the changes that occur when one puts a patient to bed for a prolonged period of time. What are some of the things that occur with deconditioning? Tilt table tolerance diminishes; leg veins feel full (and look the same way); subjects are unsteady and feel as though they are going to faint (and sometimes they do); heart rates are more rapid than normal when usual activity is attempted and even such a simple activity as standing results in a fast pulse; the blood pressure seems to want to stay

at somewhat lower than normal levels and the subject complains of feeling weak.

There are a number of things that will modify this response to deconditioning resulting from weightlessness or bed rest or hypodynamism. First, a good intensive training period defers onset of the symptoms and seems to hasten return to normal if the period of hypodynamism hasn't been too prolonged. An anti-G suit, one that has bladders that apply pressure to legs, arms, belly and so on, markedly increases the tolerance of a deconditioned subject to tilt table

"As we speak about space medicine we must realize that we speak both about men and hardware. Our command develops new systems, improves and modifies old ones, but the Deputy Chief of Staff, Bioastronautics and Medicine, deals with an old system which is unimproved and unmodified, that is man."—General Wenger

maneuvers and seems to give a significant amount of protection from the other symptoms of deconditioning. At the Aerospace Medical Division, a simple home-made box which permits application of negative pressure to the lower half of the body gives significant protection from the effects of prolonged bed rest, and therefore one presumes it would also protect from the effects of weightlessness, which is merely another type of hypodynamism. This negative pressure gives a pressure gradient along the body which is related to, or partially supplants the gradient of pressure normally induced by gravity. Pressure cuffs have also been used during space flights as well as on bed rest subjects, in an effort to reduce the amount of symptoms and the amount of deconditioning. Benefits were questionable.

In weightlessness (or bed rest) conditions, there seems to be a lessened requirement for oxygen transport and an increased ease of actually circulating the cells that are needed for oxygen transport. Perhaps this is the reason for the decreased mass of red blood cells and the depression of the cell forming parts of the bone marrow that occur during weightlessness.

* General Wenger is Deputy Chief of Staff, Bioastronautics and Medicine of the Department of the Air Force.

This paper was presented at the March, 1966, meeting of the Medical Society of Sedgwick County, Wichita, Kansas.

It is also true that at bed rest or under weightless conditions the need for a strong, bony, supportive system is markedly reduced. The body responds by trying to tailor the skeleton to the lesser strength called for by the lesser stresses. As a result calcium is mobilized from the bones and is excreted.

After activity is resumed there is seen an increased destruction of RBC's. One wonders if it is due to the increased trauma to cells (which had lived longer than usual in the relatively atraumatic condition of weightlessness)—trauma which is now increased to a more normal level because of increased motion, increased rates of flow, and stresses of gravity working on the long axis of the body.

All of these phenomena are seen in varying degrees when a patient is put to complete bed rest and therefore these phenomena seem not to be specific for weightlessness. This should make weightlessness much more susceptible of investigation and explanation because bed rest seems much less mysterious than does weightlessness of space travel.

Dehydration seems also to sometimes be a problem with space crews. It would be simple to correct this with proper discipline and it is, but why crews don't get thirsty enough to assure proper fluid intake is rather a mystery. Perhaps it is their emotional pitch that just makes them forget to drink.

Fatigue is an omnipresent problem. The greatest dividend in reducing fatigue is to provide crew comfort. Comfort is a term that can be used only in its loosest connotation if applied to wearing a space suit. Space suits are restrictive, annoying and uncomfortable if worn for more than a few hours. To solve this problem would require lots of research and major modifications in space suits. This is not an easy problem if one remembers the protection they must give, particularly for extra-vehicular activity. The only alternative is a spacecraft dependable enough in its life support systems to permit the astronauts to cruise about in their underwear, putting on their suit only if they wish to leave the spacecraft. This is the real solution to the problem and according to one crew, to shed the space suit on a long flight is comparable to the relief a girl gets when she slips off those tight, high-heeled shoes in the theatre or after getting home from a reception.

Another factor that contributes to fatigue is the disturbance of the circadian rhythm. The establishment of artificial rhythms based on four hours on and four hours off has been tried. Lots of fatigue results. Cycles the crew seemed to want have now been tested. This works out much better and fatigue is significantly lessened by this technic.

Some of these items just discussed can be related to some of the comments and observations resulting from GT-7's and GT-6's flight. This is the flight in

which the now historic rendezvous was accomplished. One of the crew wore pressure cuffs as an experiment to determine whether they did indeed ward off effects of weightlessness and prevent some deconditioning. The cuffs were reported as a nuisance and annoying. In fact they were reported as interfering with sleep. The crew also didn't like the EEG leads and in 48 hours they were no longer attached. The shirt-sleeve environment was hailed by the crew of the 14-day mission as the greatest boon since the discovery of fire. Obviously all these items had to do with crew comfort and were given major emphasis in the crew reports.

In the laboratory field it was noted that the red cell mass decreased by 400 cc. and 200 cc. respectively in the command pilot and pilot of the long mission. The plasma volume increased by the same amount, so apparently the volumetric measure of circulating fluid remained about the same although the composition was changed to a degree. The post-flight oxygen uptake studies showed 46 per cent less uptake than pre-flight studies. The reason for this remains obscure. Heart rates in response to exercise increased more rapidly than they did in pre-flight tests. Attempts to correlate the weight loss, tilt table tolerance, and blood volume or cell mass changes in the various crew members failed utterly.

The crew elected to sleep and work on a rhythm which corresponded to their home time in Houston. They did beautifully on this regime and had much less fatigue.

Finally—they said that for the first three hours of weightlessness they felt as though they had too much blood in their heads. This feeling then disappeared. Upon re-entry they underwent a rather mild 3.9 G. decelerative force, but they each said it felt like 100 G's to them. Obviously their subjective tolerance to these forces had changed markedly, probably due to their deconditioning.

Several years ago a Soviet scientist, Parin, seemed sure only that Soviet spacemen could remain in space for 14 days. Longer periods were a cause of concern to him. A change in the bone marrow was one of the things causing Parin's concern. Another thing was the discovery of some abnormal cells in some cultures they flew on space missions. He advised more basic research be done before the Soviets tried prolonged manned space flights. From the beginning in 1957 with Sputnik I, the Russians have been deeply interested in biologic experiments on their space flights. In 1960 Sputniks IV, V, and VI, each of which weighed over five tons, carried biological experiments. This probably reflects the concern of their scientific community over the effects of the space environment on their space crews.

The Russians have reliable boosters, guidance

equipment, life support systems, and recovery systems. This sophisticated equipment is being used regularly by the Russians and to their advantage.

The Soviets are capable, thoughtful planners. They are now two years into a seven-year plan for exploitation of space. They have carefully considered basic rudimentary matters. For example their Vostok Program was extremely simple in developmental and hardware concepts. Comparing their Vostok with our Mercury, their spacecraft seems almost crude. It had an overall weight of more than 10,000 pounds (5 tons) as compared with 3,000 pounds (1½ tons) for our Mercury. Even with all this weight the Vostok had only a single manual and a single automatic control system, whereas Mercury had one automatic and three independent manual systems. Our Mercury was like the finely tuned little sports car that gets every bit out of its 40 horsepower, but needs perfect tuning in order to operate at all, whereas the Vostok is like our old Ford that goes and goes and goes, regardless of abuse and lack of sophistication and maintenance. The Vostok basic design is so ingenious and simple that the crew was well protected against malfunctions of systems. It was a sphere with weight distribution so that upon re-entry, regardless of attitude, it would act like a shuttlecock and put the ablative heat shield in the forward position and thus protect the cabin and crew. This would happen without the use of any type of attitude control. Even the retrofire was not essential to safety because the Vostok orbit was carefully planned so that natural decay of the orbit would occur in ten days. The spacecraft was supplied with sufficient life support to maintain the crew for more than ten days so without redundant systems the crews were well protected. This fail-safe simplicity is most impressive, and it is cheap in dollars and man-hours. Because of this and other considerations they omitted ballistic flights and went directly to orbital missions.

There is no conclusive evidence, although rumors abound to the contrary, that the Russians are careless with their men or that they have lost any on space flights. We have criticized their lack of world-wide support on their flights, but their record proves their point. Our program of support has been trimmed from 24,000 people in Mercury to about 10,000 people in support of our Gemini program. They used an O₂-N₂ cabin atmosphere at 14.7 pounds per square inch where we used 100 per cent O₂ at five pounds per square inch in our Mercury. Their Vostoks all returned through the use of their automatic retrofire. You remember Mercury had some malfunctions of retrofire and had to manage the problem manually. Russian cosmonauts were instrumented for blood pressure, pulse, respiration, electrocardiograms, electroencephalograms, electro-oculograms, and for skin

galvanic reactions. We had only the first four on our astronauts. They have also done more experimental work with dogs and other organisms than have we.

The Soviets plan their space systems in building blocks or modules. Their design approach is efficient of cost and hours. It permits adaptation of systems to a number of different missions without lots of expensive research and engineering and with little change in design or construction. Without a doubt the Soviets are checking out modules on the Cosmos series where some 110 missions have been flown. The last one, ten days ago, had two dogs aboard.

Certainly the Russians plan prolonged manned space flight. The evidence is in a statement by Cosmonaut Nikolayev made on November 11, 1963, when he said the Soviets plan space ships that will sustain life for three years. At the present, however, the Soviets are still concerned about prolonged space flight because of the experience they had with Vostok I with the three-man crew consisting of a doctor, a scientist, and a pilot. The flight was brought down early because the two relatively untrained crew members became "space sick" and even had hallucinations while weightless.

In summary, we have a manned space program of which we can be proud. The Russians have a sophisticated, well-conceived manned space program. Whether we like the idea or not, we and the Soviets are competing for men's minds. The hardest thing in the world to open is not a Scotsman's pocket book, a Mosler safe, or the Berlin wall, but a closed mind.

We in space medicine are working in a small facet of science in an effort to open closed minds, to permit us to be proud of being Americans, and perhaps to let us help fulfill the mission of our country as indicated by the President when he said, "Our nation was created to help strike away the chains of ignorance and misery and tyranny wherever they keep man less than God means him to be." We are doing our best "to help strike away chains of ignorance" in one field and are proud to share with you some of the knowledge in this field.

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Medical HISTORY

An Account of the University of Kansas School of Medicine

RALPH H. MAJOR, M.D., *Kansas City, Kansas*

(Continued from December)

The Modern Era

In 1928, Senator Charles Snyder of Leavenworth, always a staunch friend of the Medical School, called upon a group of us with a plan to discuss. Mr. Snyder, who had long been a student of state finances and appropriations, pointed out the disadvantage of the manner in which the budget of the University was drawn up. He pointed out that there had been a certain tendency to look after the needs of Lawrence and, when these needs had been satisfied, to see what the Medical School wanted and how much there was left. "Human nature being what it is," Senator Snyder continued, "you will continue to get what is left as long as we have this present system of drawing up the budget." Mr. Snyder then stated that, with the concurrence of his colleagues, he was introducing a bill to separate the budgets, one budget for the University and one budget for the Medical School. "It is our intention," he said, "to set up the two budgets separately, present them to the legislature in that form, and to spend them in that manner. In this way, the administrative head of the University cannot be pressured into taking the funds from one institution to give to the other." This change, which first went into effect in the appropriations of 1928 and 1929, has been a salutary one.

The installation of a chapter of Alpha Omega Alpha proved that our school was rising in the esteem

of its confreres. This organization, founded by Dr. W. W. Root in 1902, has been described as the Phi Beta Kappa of medicine, its members being chosen on the basis of scholarship and ability. The installation of a chapter of Alpha Omega Alpha at a medical school is evidence that the instruction in that school is of a superior type. Several on our faculty, who were members of Alpha Omega Alpha from other schools, petitioned the authorities of the society to establish a chapter at the University of Kansas. In due time, we were informed that the school would be inspected, so, during the next few days, we were busy compiling data and arguments to present to the inspectors. When the inspector, not inspectors, arrived, he proved to be Dr. Root himself, but he was interested in neither data nor statistics. He remained a week, attended classes from early morning to night-fall, heard innumerable lectures, witnessed operations, watched the laboratory sessions—did everything the students did, except answer questions at the quizzes he attended. Before he departed, he called together the small group of AΩA petitioners and told us that he thought we had an excellent school and that he was advising the council to establish a chapter at Kansas. On December 13, 1930, the chapter was duly installed at a dinner which took place at the University Club. Dr. Sudler and Dean Wahl were among the charter members of the new organization. This organization has followed the precepts laid down by Dr. Root and has been a potent force in keeping high the level of instruction and scholarship at Kansas.

Another event indicative of our growing reputation and standing was the inauguration of the Porter Lectures. Dr. J. L. Porter of Paola, Kansas, who died

This is the ninth of approximately twelve installments of Dr. Major's account of the early days of the University of Kansas School of Medicine.

in 1915, left the residue of his estate, amounting to \$30,000, to the Medical School, specifying that \$300 a year should be given to a student "in recognition of meritorious work." This scholarship, called at the request of Dr. Porter, the "J. L. Porter Scholarship," was first awarded in 1918 to Mr. Laurence S. Nelson, now one of the best known and most highly respected physicians in the state of Kansas. Dr. Porter also specified that any remaining income could be spent in any way "for the best interests of the medical department." As a sizable balance had accrued, it was decided to establish an annual Porter Lectureship. The first lectures were delivered in 1930 by Dr. Lewellys F. Barker, professor of medicine at Johns Hopkins, and the list of lecturers since that time reads like the roster of a medical hall of fame.

This Porter bequest was entirely unexpected. Dr. Porter was not an alumnus of Kansas but of Rush Medical College. Dr. Sudler, who was Dean at the time, told me that he had never seen Dr. Porter and that, so far as he knew, Dr. Porter had never visited the Medical School. Yet his name is indissolubly linked with the Medical School. A generation of medical students have been financially aided by the Porter Fund, and a generation has received intellectual stimulus from the Porter Lectures.

The same year, stimulated by the successful establishment of the Alpha Omega Alpha and the Porter Lectures, the Medical School launched the *Bulletin of the University of Kansas School of Medicine*. The purpose of this bulletin was to publish a report on the scientific work carried out in the Medical School. However, the venture proved premature and, after withering on the vine for four years or so, the *Bulletin* gave up the ghost and was quietly interred. No further publications were attempted until 1949, when the *Bulletin of the University of Kansas Medical Center* was launched under the able editorship of Dr. Glen R. Shepherd. This publication was a success from the beginning and continues to be much appreciated by its readers. It wisely does not attempt to publish scientific articles but confines itself to reporting the important happenings at the Medical Center and news of the alumni.

The people of Kansas do not remember the years 1933, 1934, 1935 and 1936 with any especial joy. They were the years of depression and of drought. The governor, seeing the state finances in a precarious condition, ordered a cut of ten per cent in all state salaries, including those at the University. All University appropriations were slashed. Yet the Medical School suffered less than other departments. These years saw the construction of the Children's Hospital, the outpatient or clinic building, the contract for which was signed on November 29, 1935, and the Hixon Laboratory. The nest egg for the con-

struction of the clinic building consisted of fees, saved during this period by Dr. Wahl. Although business in general was bad, hospital fees continued to be paid by all except the indigent. Possibly this paradoxical state of affairs was due to the willingness of patients, when suffering, to give up radios and new cars in favor of medical treatment.

This clinic building, erected on the order of the Board of Regents from funds not voted by the legislature, temporarily was under fire from a governor and some legislators, who insisted that, since the legislature did not authorize its construction, they were not obligated to appropriate money for its support. The flimsy old "cardboard" building, or the barracks, was abandoned and outpatients began to pour into the new building, which, to both patients and staff seemed like a palace when compared to the old dispensary. It was a beautiful, roomy, clean, airy, well lighted, and cheerful building, efficient and well designed. Dr. Hashinger was really euphoric as he surveyed the domain he was to rule.

It may come as a surprise to some to learn that during these years there was a hill between the administration building and the clinic building, where the present court and fountain are located. The removal of this hill seemed an ideal project for the P.W.A., so, when it was suggested to them, they gladly accepted the challenge. In 1933, they began the work by hand, shoveling and digging at the mound. No excavating machines were permitted, but a force of some 200 workmen, shoveling and digging, finally leveled off the ground at an expense of \$100,000. It was explained at the time that it could have been done much more cheaply by employing bulldozers with only a few workmen, but this method employed a large force of men, who would have otherwise been on relief. Perhaps the logic was good. At any rate, the hill was leveled.

Another advance during these depression years was the institution of residencies. When the new Bell Memorial Hospital was opened in 1924, there were three internes; in 1925 six internes. Thus the number steadily increased until 1934, when there were eight internes. This same year, there were three medical residents—Leslie B. Smith, Max Berry, and J. F. Simon; two surgical residents, Wayne Bartlett and Morris Harless; one pediatric resident, George Herrman; and one obstetrical and gynecological resident, Robert Maxwell, a total of seven residents.

From these relatively simple beginnings, the resident staff has grown rapidly. From seven residents in 1934, the number had grown to 14 residents in 1944 and 61 in 1952. The number of internes was eight in 1934, 19 in 1944, and 23 in 1952, a steady growth but not comparable with the growth of the residencies, either grossly or proportionally.



Figure 42. Hixon Laboratory

In 1935, Logan Clendening came to me with the surprise announcement that he thought he could obtain some funds for the Medical School to use for some special purpose and that he wished to discuss the matter with me. He explained to me that his father-in-law, Mr. Frank Hixon, had left a bequest to be expended for scientific research and since his wife, Dorothy Hixon Clendening, was a trustee of this fund, he thought the Medical School could obtain a grant.

Logan had recently been in New York and was much interested in the employment of oxygen in the treatment of pneumonia and heart disease. He had in mind rebuilding part of the third floor of the hospital as a large ward where oxygen could be piped in and the oxygen content of the air kept constantly at a high level. I suggested to Logan that a laboratory where all types of medical research could be carried out be built instead, and called the Hixon Laboratory. Logan became quite thrilled with the

idea and set to work at once to secure the necessary funds.

The basement and the first two floors were completed the following year, and, in 1938, two additional stories were added (*Figure 42*). The third floor was completed and furnished by Dr. and Mrs. Clendening and housed the outstanding Clendening library of medical history. This library, assembled by Dr. Clendening over a period of 20 years, represented one of his great loves or, should I say, passions. To assemble such a library requires expert bibliophilic knowledge, a deep appreciation of the beauties of type and bindings, as well as an ample purse—all of which Logan possessed in abundance. To see this magnificent collection housed in a library designed by the noted architect, Edward Buehler Delk, made Logan so happy he described himself as walking on eggs—and he weighed at this time well over 200 pounds!

The charm of this library (*Figure 43*), with its walnut panelled walls and deep luxurious chairs, impressed every visitor to the School. On the same floor with the library are the museum of medical history and a luxurious lecture room with comfortable upholstered chairs and a lecturn, designed by Dr. Clendening, which permits the lecturer to demonstrate with facility large folio volumes as he talks. The floor of hard maple was kept highly polished by Bruce Walker, an old retainer of the Clendening household.

Logan, a great believer in academic as well as personal freedom, decided that students should be allowed to smoke during lectures and installed a dozen portable ash stands. This experiment, however, proved a dismal failure. The smokers, true to the perversity of cigarette habitués, declined to use the ash trays and instead, after smoking, ground their



Figure 43. Library of the History of Medicine

cigarettes under their heels on the floor. At the end of the semester, the beautiful, new, hard maple floor was pitted with numerous small, black craters. Logan swore a vigorous and picturesque oath and summoned workmen, who shaved, sanded, varnished and polished the floor until it regained its original appearance. Then he posted a very forceful notice to the effect that there would henceforth be no smoking in this room. This notice has been altered to "No Smoking," and the prohibition still holds.

Logan inaugurated his new quarters by securing as lecturers four distinguished authorities on the history of medicine—Dr. Henry E. Sigerist (*Figure 44*) and Sanford V. Larkey of Johns Hopkins, Dr. John F. Fulton of Yale, and Dean Chauncey Leake of Texas.

While Clendening directed the department and gave most of the lectures himself, he called in some of his colleagues to lecture on special topics. One of these was Dr. Matthew W. Pickard, who lectured on Chinese medicine. Pickard was a most interesting, charming and intelligent gentleman (*Figure 45*). A Russian by birth and language, he had an unmistakable French name, which he explained to me was due to the fact that his ancestor, a certain Piccard, followed Napoleon in his disastrous campaign into Russia but never returned, remaining instead in Russia. Pickard was born and educated in Russia, became

ed in the Orient, studied the Chinese and Japanese languages, made several trips to China and Japan, returning with many Chinese and Japanese medical books, pictures, statuettes, and various objects relating to the medicine of the Orient. These he generously presented to the Department of the History of Medi-



Figure 45. Matthew W. Pickard

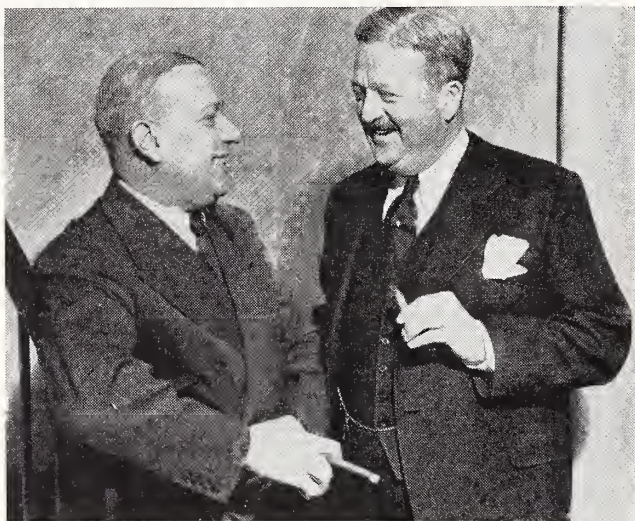


Figure 44. Henry E. Sigerist and Logan Clendening

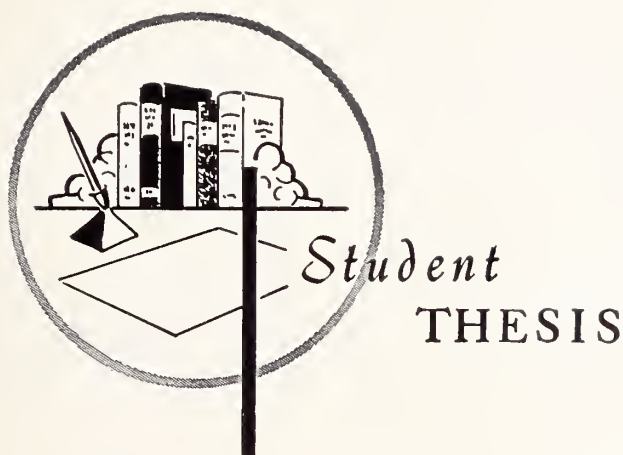
an officer in the Imperial Russian Navy but left it, came to Kansas City, studied medicine, and began practice there. For many years, he was surgeon to the Kansas City Terminal Railway.

Pickard, like most educated Russians of that era, was a marvelous linguist. He was fluent in French, German and Italian, and, when he spoke English, you were positive that he was born and raised in the Middle West. Later in life, he became much interest-

cine, where they are listed among our choicest treasures (*Figure 46*).

In leafing through the old catalogues of the Medical School, we find that 16 lectures on the history of medicine were given to first year medical students in 1905 by Dr. Frederick D. Morse, Adjunct Professor of the History of Medicine. Dr. Morse, a graduate of Amherst College and of Rush Medical College, is described by Dr. Hoxie as the leading physician of Lawrence of 1902, "getting old," and a man who "combined the culture of New England with the practicality of the Midwest." The schedule of lectures on the history of medicine continues regularly in the catalogue for five years and then disappears. When I was professor of pathology, I conducted a seminar in the history of medicine at which sophomore students read papers on historical topics and personages, but there were no lectures on the sub-

(Continued on page 19)



Emergency Care and Good Samaritan Legislation

LARRY L. HECK, M.D.,* *Kansas City, Missouri*

THIS ARTICLE does not attempt to deal with the kind of aid, or to evaluate the effectiveness of aid that can be administered at an emergency. All physicians are able to administer at least first aid procedures. The author's main concern is that they do this readily and without fear of subsequent legal snarls.

History

If a doctor coming upon the scene of an emergency followed the tradition of the biblical Good Samaritan, he would stop, "bind up the person's wounds," accompany him to the nearest hospital, and remain until the victim was in capable hands. A great many complexities have intervened to cloud emergency aid since the gracious act of the traveler from Samaria. The possible involvement in civil damage suits is one of the factors that has made the execution of a modern Good Samaritan task much more difficult.

Recently, there has been a great deal of effort throughout the country aimed at rectifying the insecurity that a medical doctor may feel when offering emergency aid to an unknown patient. Most of the positive steps taken have been in the form of state Good Samaritan statutes. The emergence of these

laws is within the realm of recent medical history. Early in 1959, a California legislator told several representatives of the California Medical Association that he had been informed that physicians around the Sierra Nevada mountain ski areas were reluctant to give emergency aid to injured skiers. The reason given was a fear that if anything went wrong, the doctors might be sued. Shortly thereafter, Mr. Howard Hassard, an attorney for the California Medical Association, prepared a bill which was introduced by Assemblyman W. Byron Rumford. The bill had no committee opposition, was passed by the California legislature, and went into effect in September of 1959. It states:

No person licensed under this chapter, who in good faith renders emergency care at the scene of the emergency, shall be liable for any civil damages as a result of any acts or omissions by such person in rendering the emergency care.

This unique law arose to induce more California doctors to volunteer aid.

Problem

Within two years, other states were attempting to correct the problem. At that time a definite problem existed and it still exists today in the minds of physicians. In a national poll conducted by the *Medical Tribune* in 1961, over 1,200 doctors responded and 50 per cent stated they would be either very reluctant

* This is one of a group of theses written by fourth year students at the University of Kansas School of Medicine, selected for publication by the Editorial Board from a group judged to be the best by the faculty at the school. Dr. Heck is now interning at the Kansas City General Hospital, Kansas City, Missouri.

or definitely would not stop to volunteer aid at the scene of an emergency. In a random survey of one hundred Kansas physicians conducted by this author, 32 out of 91 or 35 per cent of the doctors answered that they absolutely would not aid at an emergency in another state.* Thus, it appears that within the profession there is significant fear of malpractice litigation and concern over such time-consuming involvements as being subpoenaed to testify in court.

There are many factors which influence a physician's outlook on administering emergency medical help. Physicians know that malpractice cases are very prevalent and they are aware that their malpractice insurance premiums increase from time to time. The National Bureau of Casualty Underwriters reported an average increase of 5.8 per cent in premium rates from 1959 to 1963. Physicians, therefore, assume that if the risk is increasing in routine medical care, it is likewise more dangerous to engage in emergency medical care. Whether or not this is a valid conclusion cannot be unequivocally demonstrated, because it is not possible to compile a list of all malpractice threats. It can be definitely stated, however, that none of the increase in malpractice insurance premiums is due to an increase in awards for damages arising from emergency care.

Perhaps one of the greatest deterrents to a doctor's willingness to administer aid is the knowledge of a specific case in which a physician has been sued or threatened with a lawsuit arising out of emergency care. These cases are rare indeed, but those that occur often receive a large amount of publicity and may engender a lasting impression of distrust in the physician's mind. An appropriate illustration of such a publicized case appeared in the December 19, 1960, issue of *Medical Economics*. The article was entitled, "My Pay for Saving a Life: a Malpractice Suit." The story related how a physician gave a patient dying of bullet wounds emergency care, including a direct transfusion of the doctor's own blood, and treated him until he regained his health. Later, the doctor was sued for damages. Although this particular case did not involve emergency care rendered outside a hospital emergency room, and the patient never collected, it did focus on the legal risks involved in emergency aid. The few cases that do occur have the potential of becoming known to physicians very readily and this may discourage them from volunteering aid.

The point to be emphasized is that the likelihood of being sued for administering emergency aid is exceedingly slim. The Law and Legislative Departments of the American Medical Association "have

been unable to discover, after diligent research, a single reported appellate court decision holding a physician liable for negligence or malpractice arising out of the furnishing of professional services at the scene of an accident or emergency. A more informal survey of the major malpractice insurance carriers conducted by the A.M.A. reveals that claims against physicians arising out of emergency situations are so rare as to be almost non-existent." The professional liability insurance company which has handled more claims than any other single company has had only one Good Samaritan fact situation. This incident occurred in Indiana prior to the initiation of its Good Samaritan statute in 1963.

Other Factors

The threat of malpractice is certainly not the only factor tending to discourage physicians from volunteering emergency aid. Many physicians do not feel qualified to aid because they practice a specialty far removed from treating emergencies such as traumatic injuries. These physicians know that if they do administer medical assistance, they will be held accountable for a higher degree of skill than would a lay person acting in the same situation. For this reason, they may be hesitant to administer first aid when it might be indicated. The Medical Society of Delaware maintains that Good Samaritan legislation is needed to protect these physicians because "it recognizes as a penalty of specialization that many physicians cannot, for perfectly valid reasons, meet the accepted community standards for all procedures."

Another deterrent is the threat of subpoena. Testifying in court may require a period of time away from practice with very little compensation. The passage of Good Samaritan laws will not prevent this inconvenience to the physician. Because of his training, a physician may continue to be more subject to subpoena to explain the extent of injuries in a civil suit.

Would Good Samaritan legislation help remove some of the reluctance of doctors to volunteer aid? This seems to be confirmed by the *Medical Tribune* poll as well as the Kansas poll. In the *Medical Tribune* survey, almost 98 per cent of physicians felt they should be protected by law against liability arising from roadside emergency treatment. In the Kansas poll of one hundred physicians, 83 of 91 respondents felt that physicians should be protected by specific law against liability arising from emergency treatment. Seventeen of the 91 said they would not offer emergency assistance in Kansas* and 32 stated they would not offer emergency aid under any circumstances in another state. The group of 91 in-

* These physicians were selected from the practicing physicians in the state by the use of a random table of numbers.

* Kansas does not have a Good Samaritan statute.

cluded 47 specialists and 44 general practitioners and 16 from each group replied that they would not aid. However, when confronted with the question, "If Good Samaritan laws protecting physicians existed in every state in the U. S., would you be willing to aid at an emergency?," 30 of the 32 said they would.[†]

There are certain objections from lawyers, lay individuals, and physicians concerning the institution of legislation that would absolve physicians from liability. Some argue that such laws would deprive an individual of due process of law. Arguments have been raised that Good Samaritan statutes constitute class legislation and are, therefore, unconstitutional. Several state medical societies have not supported statutes for that reason. Since none of these laws has been tested by a court case, there is only personal speculation as to how the courts would interpret them. Viewing the paucity of lawsuits resulting out of emergency treatment, many lawyers and some physicians oppose the legislation as unnecessary. The argument here is that these laws merely increase the bulk of medical legislation without achieving any practical results. In view of the number of malpractice cases on file, the laws appear to be of questionable need. However, if more physicians would render aid more willingly and with fewer reservations, then these laws have considerable merit.

Legislative Action

Presuming a need has been established, it is enlightening to examine what is being done legislatively to solve the problem. Since 1961, as a result of widespread interest in Good Samaritan legislation, every state has passed, defeated, or its medical society has considered emergency liability legislation. The California law (and laws passed in other states in 1961) has served as the impetus for the passage of this legislation. The laws already in force are frequently cited by legislators attempting to get laws passed. The most common statement of purpose of Good Samaritan bills is to insure protection for doctors who volunteer aid. It is also frequently proposed that these bills will promote the public welfare by inducing more physicians to aid. The proponents of the bills often exaggerate the malpractice problem in legislative sessions. This is done primarily to insure passage, although in some instances this may have been done because of an inadequate knowledge of the situation as it exists. Typical statements which cannot be supported by evidence are recorded in legislative proceedings. In a hearing on the Nebraska

bill, for example, it was maintained that a physician stopped at the scene of an accident, gave first aid, was sued, and lost his entire estate. This incident as it was related cannot be substantiated by court records or the A.M.A. A speaker in favor of the Pennsylvania bill stated, "It is becoming more and more frequent today for people to lay suit against physicians who in good faith do their utmost at the scene of an accident." The statistics of liability insurance companies refute this latter claim.

In a few states there was little opposition to the bills, and these bills were passed in their original form. In other states, however, extensive disagreement resulted in numerous and heterogeneous amendments to bills before they were passed or defeated. The net result of this legislative action was the passage of state laws which are very dissimilar. Some of the basic variances in laws passed in 29 states through the year 1963 are outlined in Table 1. In addition, New York and South Carolina have passed Good Samaritan statutes in 1964.

From the table, it is evident that there is a considerable lack of uniformity among the various states. Even if all states eventually passed Good Samaritan legislation, it would be impossible for a physician to know the extent of his coverage just as it would currently be impossible to remember which states have passed Good Samaritan statutes. In the final analysis, a physician would never be able to know whether or not he was protected. One possible corrective measure for this plight would be to include information on all state road maps briefly outlining the immunity from liability.

Suggestions

From an analysis of the laws in force, it seems apparent that a model Good Samaritan law should include a number of prescribed limitations and immunities. It should protect and probably be limited to any licensed physician. Medical doctors, who generally have more adequate training, are held responsible for a higher degree of skill than other practitioners and laymen. The law should apply to any emergency outside of a hospital or physician's office. Automobile accidents would likely account for the majority of cases, but the law should not be limited to this precise category. There should be an inclusion of care rendered in good faith and gratuitously. When the doctor has placed the injured or ill patient in the hands of a responsible party, be it physician, ambulance driver, or friends, he should be protected from any suit involving abandonment of case. Finally, to preserve the patient's right to due process of law, freedom of liability should be limited to gross negligence.

[†] This might be considered a leading question, since it uses the word "protection" and it is not yet known if these laws will be protective.

It is highly improbable that legislation throughout the fifty states will ever become very uniform. With this thought in mind, it can be suggested that only federal legislation would be capable of transcending the state diversity and give definite limits of protection. However, at the present time the incidence of malpractice litigation is too rare to warrant any federal legislation. The states, then, should attempt to institute the best legislation of which they are capable, in view of the fact that forty of the state medical societies favor this legislation.

A physician's willingness to assist in an emergency can have a profound influence on public opinion. Good Samaritan cases are frequently publicized and are bound to enhance the public's image of the physician. It follows that a physician's refusal to aid at an emergency, or the report that an automobile bearing a medical insignia passed the scene of an accident without stopping, blemishes this image. A front page headline in the *Baltimore News-Post* of May 18, 1961 read, "Two Doctors Refuse Call, Man Dies." The article proceeded to announce that a policeman filed a report stating that two doctors "refused to come" to the scene of an emergency. This type of publicity, although rare, is invariably detrimental. Certainly, Good Samaritan laws would not eliminate problems similar to this, but they should alleviate them to some extent.

Summary

The main point of this report is that there is negligible danger of a malpractice suit arising from an emergency situation. Therefore, each physician should be free to rely only upon his own feeling of moral duty in deciding whether or not to volunteer aid. However, physicians desire legislation protecting them from liability, and it seems likely that more physicians will aid if they are covered by specific law. A Good Samaritan law exemplifies the statement which has been made, that if a law saves only one life, it is a good law.

EDITOR'S NOTE: References may be obtained by writing the JOURNAL, 315 West 4th Street, Topeka, Kansas 66603.

Medical History

(Continued from page 14)

ject and the course was not listed in the catalogue. The catalogue for 1928 carries the announcement of a course in the history of medicine given by Dr. Clendening, Professor of Clinical Medicine, 18 hours in the sophomore year. There had been no courses in



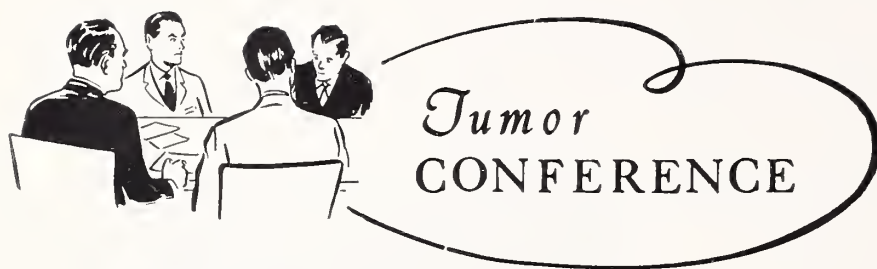
Figure 46. Dr. Pickard's bookplate

the history of medicine listed for 18 years. The catalogue for 1940 describes Clendening as professor of the History of Medicine and lists a Department of the History of Medicine with Clendening as head and Dennie, Hall, Jager, Major, Mills, Pickard, Skinner and Sherwood as lecturers.

(To Be Continued Next Month)

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Nasopharyngeal Tumor

Edited by **ROBERT LOVETT, M.D., Kansas City, Kansas***

Dr. Leonard Sullivan (Resident in Pediatrics): This is the case of a five-year-old male who was first admitted to the neurosurgery service of KUMC on November 26, 1965, and then to the pediatric service on December 24, 1965. His complaints were headaches, slurred speech, abnormal eye movements, and somnolence of about five weeks' duration. Physical findings included sixth nerve paresis, dysphagia and depression and immobility of his soft palate. A skull x-ray, ventriculogram and brain scan were all normal. The possibility of a brain stem tumor was considered but since no definite diagnosis had been established, a trial therapy of Decadron was initiated.

Dr. Stanley R. Friesen (Moderator): May we see the x-rays taken at this time?

Dr. Richard Morrison (Resident in Radiology): The patient's skull film, taken in November, reveals no abnormal calcification and, of course, the pineal is not calcified. The sella is normal and there is no abnormal bone sclerosis. The basilar view of the skull, the brain scan and the chest x-ray are also normal. The patient had two pneumoencephalograms, both of which are normal as far as intracranial disease is concerned. However, Dr. Davidson noted that the adenoids appeared to be enlarged.

Dr. Friesen: On a pneumoencephalogram?

Dr. Morrison: Yes, sir.

Dr. Friesen: Amazing. Let us return to the clinical history.

Dr. Sullivan: Since the diagnosis of possible brain stem tumor could not be confirmed radiologically, no definitive diagnosis was made. The patient was discharged and followed closely. Two weeks later he began to have intermittent vomiting and was readmitted to the hospital. At this time the patient had papilledema. This was not present during the first hospitalization. Also, at this time the radiologists reported that the skull films revealed a large mass in the nasopharynx (*Figure 1*). This mass reported by the radiologists was not visible through the nose or mouth; however, the soft palate was depressed and immovable. Initially this was thought to be due to a ninth nerve paresis but in retrospect we realize that it was due to compression by the mass. The patient still had dysphagia and slurred speech and in addition was also still somnolent.

The patient was referred to Dr. Kirchner who biopsied the nasopharyngeal mass and submitted it to pathology for diagnosis. Because of the child's difficulty with swallowing, a feeding gastrostomy was performed. At this time a wedge biopsy of the liver was taken and this revealed only fatty metamorphosis. The patient was treated with Vinblastine and Cytosan and the patient's dysphagia disappeared and he has since been able to maintain an adequate oral intake.

Dr. Friesen: Dr. Mantz, what did the biopsy of the nasopharyngeal mass reveal?

* From the Department of Pathology, University of Kansas Medical Center.

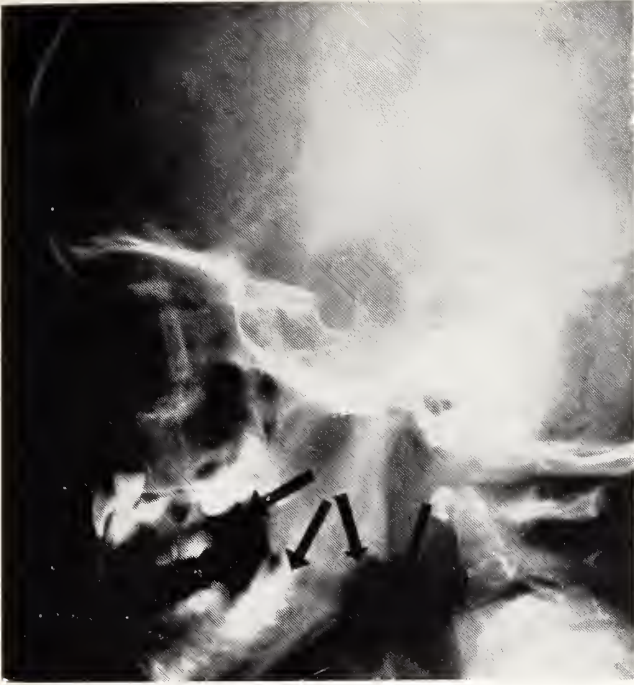


Figure 1. Skull x-ray showing nasopharyngeal mass (borders and direction of expansion indicated by arrows).

Dr. Frank A. Mantz (Pathologist): The three most common tumors of the nasopharynx in childhood are lymphoepithelioma (or transitional cell carcinoma), embryonal rhabdomyosarcoma and lymphoma. As you may have guessed, this patient had a lymphoma. The biopsy material revealed adenoid tissue, the architecture of which is obscured by the intense cellularity. The mucosal epithelium is stretched over the surface of the lesion and beneath it are dense accumulations of lymphocytes with occasional round, clear areas which represent the cytoplasm of the larger histiocytic cells, which sometime contain phagocytized material. This appearance of clear areas in the densely cellular background (*Figure 2*) has been euphemistically referred to as the "starry sky" phenomenon, regarded by some pathologists as a sign of benignancy. Many pathologists however, including myself, have never subscribed to this idea. The major cell type is a primitive lymphocyte or, more properly, a lymphoblast and marks this lesion as lymphoblastic lymphoma. Special stains for reticulum, showing a detailed pattern of reticulin fibers, confirm this diagnosis.

As you know, nasopharyngeal lymphoma in children is a common, well documented tumor. In this regard I would like to invite your attention to a specific group of lymphomas which were described by Dr. Burkitt in Africa.^{1, 2} The Burkitt lymphomas, as they are now called, occur in children and have a predilection for origin in the region of the jaws, nasopharynx, orbits and gonads. These lesions tend

to remain localized in these extra-lymph node sites for relatively long periods of time, although ultimately a diffuse and generalized lymphomatous involvement usually occurs. The interesting thing about Dr. Burkitt's original observations were that these cases of lymphoma were confined to a belt on either side of the equator in Africa and more particularly in areas which had certain common environmental conditions such as rainfall, elevation, temperature, and vegetation. As a result of this, there was a strong suspicion that they could be of infectious origin, perhaps a virus disseminated by some vector common to the area. Studies along this line have continued to suggest that this may indeed be a viral disease^{3, 4} and further studies are progressing.⁵ A couple of years after Dr. Burkitt initially described this lesion it was pointed out that a common histopathologic feature of all of these lesions was the so-called "starry sky" phenomenon.⁶ It has been observed in several centers in the United States that there have been many nasopharyngeal lymphomas which have the clinical and histopathologic features of the Burkitt type.^{7, 8}

The section now being projected, which has the typical histologic features of the Burkitt lymphoma, interestingly enough was not derived from a human patient but from a dog. We were fortunate in getting this dog prior to its death and turning it over to the research group of Dr. Werder and Dr. Larsen who were able to demonstrate from this tissue a virus capable of growth on tissue culture and of rapidly producing leukemia when injected into axenic mice.

In conclusion, I believe that this case is of particular interest in that it resembles the Burkitt lymphoma of Africa and it has been shown here at KUMC that a similar tumor in a dog did give rise to a virus-like agent capable of producing lymphomatous disease in other animals.

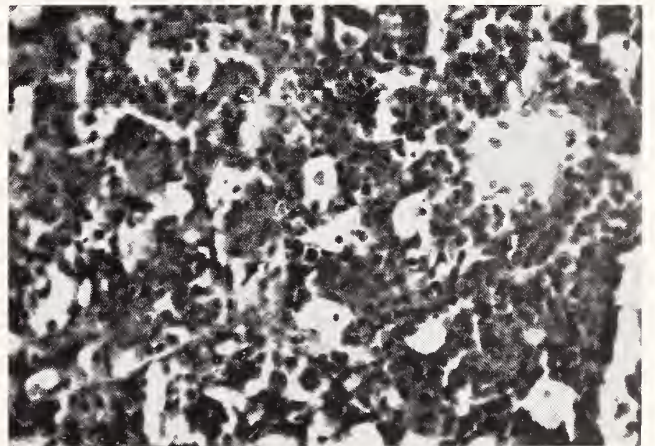


Figure 2. High power view of nasopharyngeal tumor showing histiocytes interspersed in a dense background of lymphoblasts.

Dr. Friesen: Did I understand you to say, Dr. Mantz, that this tumor frequently occurs in extra-lymph node sites?

Dr. Mantz: Yes, classically in the region of the jaw, orbit, nasopharynx and also in the gonads.

Dr. Friesen: Dr. Walters, do you have any comments regarding the therapy in the case?

Dr. Thomas R. Walters (Pediatrician): The patient was transferred to the pediatrics service with the gastrostomy tube in place. I believe that the radiation directed to the nasopharyngeal mass enabled the child to go on oral feedings within two or three days, and his nasopharyngeal tumor was "melted" away. I think this was due primarily to the radiation therapy. In addition he has received Prednisone, 80 mg. p.o. per day, then 3.5 mg. of Vinblastine intravenously every other week and, on alternate weeks, 300 mg. of Cytoxan. All three of these drugs have had some success in the treatment of lymphomas but I believe that the radiation therapy has helped this boy the most. His nasopharyngeal mass is no longer detectable either by physical examination or by x-ray studies. One unfortunate development has been that the patient has developed a gastrocutaneous fistula subsequent to his gastrostomy. I feel that this is related at least partially to his chemotherapy, particularly his Prednisone therapy and poor healing response. The patient is now mentally alert and the soft palate is in normal position. The bilateral sixth nerve paresis is still present.

Dr. Friesen: Dr. Cowan, do you have any comments to make about the radiation therapy?

Dr. George Cowan (Radiologist): In addition to directing radiation therapy to the nasopharyngeal mass in the hope of reducing its size, we also included radiation of the basilar meninges because he had some evidence of meningeal irritation and there were unclassified cells in the cerebrospinal fluid. It is feasible to radiate his entire cerebrospinal canal but it is hoped that his systemic chemotherapy will control his meningeal disease.

Dr. Friesen: Do you believe that the nasopharyngeal and meningeal involvement is contiguous?

Dr. Cowan: There is no erosion of the base of the skull and I believe that it is a manifestation of multifocal lymphomatous involvement.

Dr. William Larsen (Hematologist): I would like to ask if another spinal fluid tap has been obtained and if intrathecal chemotherapy has been considered.

Dr. Walters: We definitely intend to do another spinal tap before the patient leaves the hospital and if the pleocytosis is still present or if the patient again develops signs of meningeal irritation, intra-

thecal chemotherapy will be seriously considered.

Student: Were there any significant intra-abdominal findings at laparotomy?

Dr. Walters: First, let me say that there was a palpable abdominal mass. According to Dr. Tom Holder, the surgeon, there was a large palpable mass in the midline, behind the pancreas and anterior to the great vessels. This was not biopsied. In addition there was an ill-defined, light colored, 5 cm. in diameter lesion of the left lobe of the liver which was biopsied.

Dr. Friesen: What did the pathological study of this biopsy show?

Dr. Mantz: The liver biopsy showed only fatty metamorphosis. It is likely that a localized area of fatty metamorphosis of the liver may look very much like a lymphomatous infiltrate grossly.

Dr. Cowan: Why would a five-year-old child have fatty metamorphosis of the liver?

Dr. Mantz: A five-year-old child could have fatty metamorphosis of the liver from a variety of causes, but in this case I would suppose that the history of dysphagia and malnutrition is significant.

Dr. Friesen: Dr. Mantz, do you think that this so-called "starry sky" phenomenon has any significance?

Dr. Mantz: Tumors of the reticuloendothelial system take many forms. We do not, however, see this phenomenon in the classic lymphosarcomas or in a reticulum cell sarcoma or Hodgkin's disease. This histological variant from the usual picture in lymphoma corresponds nicely with the rather distinct clinical characteristics of the Burkitt lymphoma.

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The President's Message

DEAR DOCTOR:

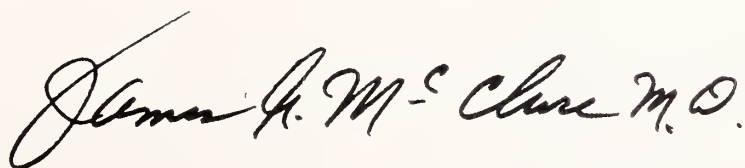
When this reaches your desk the Kansas legislature will be in Topeka. The hard process of reducing the dreams and theories of many persons into acceptable law will have begun. It has been many years since health care has been so exposed before public and political scrutiny as appears imminent at this session. Rarely have those who provide health services faced a dilemma of such magnitude where services and cost are placed in opposition.

Title XIX will almost certainly be warmly debated in which the realities of a budget will struggle against the temptation of providing broad benefits. S. 3008, now officially 89-749, requires the designation of a state agency to coordinate federally supported health programs. The briefest pause for reflection upon the unlimited scope of such opportunity will bring cause for concern.

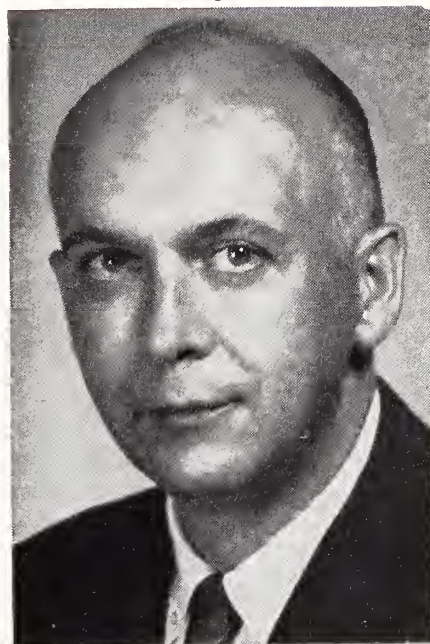
We believe the major allied professions are now more closely united in their opinion than at times in the past and upon such issues as cited above physicians, too, are in agreement. Stated in over-simplified terms, we affirm that services purchased by government shall be paid for, as are commodities, at a cost not less than is charged the private consumer. Second, if a third party must regulate, audit, and make claim payments let that be an agency in which the provider has confidence.

This is to say, we shall expect usual fees for our services and we elect to present our claims through Blue Shield. It is our hope that this Society position meets with your approval and that you will give it your individual support.

Sincerely,



President





"What Happened to Stormont Library?"

This question was asked of no one in particular, by a physician from down-state at a recent meeting of the Education Commission. Those of us from the Shawnee County Medical Society were quick to explain that Stormont Medical Library is flourishing and healthy and in spite of her 77 years and past tribulations.

To refresh your memory, Stormont Library was established in 1889 as a memorial to Dr. David W. Stormont, by his widow, Jane C. Stormont. The initial gift was a \$5,000 trust fund, plus \$5,000 for the immediate purchase of books. The trust fund was to be held in perpetuity by the legislature which established the Stormont Medical Library as a part of the State Library and was housed in the Capitol building. The original gift was augmented only by a gift of \$1,000 by Mrs. Ann Sheldon, widow of Dr. Silas Sheldon, in 1908, and the library languished in the hidden recesses of the State House, a poor, neglected step-child of the State Library.

Through the years legislators and governors cast covetous and lusting glances at the space occupied, and gasped in horror at the enormous cost of maintaining it, the library, for people, physicians, who truly showed little interest. Thus, in 1963, Governor Anderson, by the simple expedient of leaving it out of the budget, doomed the Stormont Library to extinction.

A few interested physicians in the Shawnee County Medical Society felt that this would be a grievous loss to us and to the State, and with a little work, a little persuasion, and legislative fiat, the Stormont Medical Library was transferred to the joint control of the Shawnee County Medical Society and Stormont-Vail Hospital. The housing is supplied by

Stormont-Vail and the financial responsibility is borne about equally between the hospital and the physicians of this society.

The use of the library has about quadrupled since its removal. We have available five medical libraries, including the Clendenen, with which we co-operate on an inter-library loan arrangement, very quickly and efficiently. The use of this library is not restricted to physicians from Shawnee County. It is still the Stormont State Medical Library and we welcome its use by any physician, nurse, attorney, or any other qualified persons. The librarian, Mrs. Betty Culley, and Dr. James Mott, who willingly volunteers his time, are available for bibliographic assistance and the collection of material.

The physicians of Shawnee County are proud of their efforts to perpetuate this venerable Medical Library. Indeed, it is costly; however, we feel that we are poorer but wiser men.

RICHARD GREER, M.D.
Topeka

NEW MEMBERS

The JOURNAL takes this opportunity to welcome these new members into the Kansas Medical Society.

Russell L. Hunter, M.D.
2020 Central
Dodge City, Kansas

H. Jordan Whyte, M.D.
918 West 10th Street
Topeka, Kansas

AMA House of Delegates

Report on Actions Taken at the 20th Clinical Convention, November 27-30, 1966, Las Vegas, Nevada

EDUCATION FOR FAMILY PRACTICE, billing and certification procedures under Public Law 89-97, proposed revisions of the Selective Service System, payments for professional services, compensation for house officers, and use of the terms "ethical" and "unethical" were among the major subjects acted upon by the House of Delegates at the American Medical Association's 20th Clinical Convention held November 27-30 in Las Vegas, Nevada.

Dr. Charles L. Hudson, AMA president, told the Monday opening session of the House that the need to improve existing services and establish new services for the total population should be a "top priority" of the medical profession. He proposed that the AMA and the state and county medical societies launch a continuing program, under predominantly private auspices, for all persons of whatever age, race, creed or color, and he emphasized that it is "among the needy and formerly indigent that I feel we must show interest, initiative and enterprise."

Final registration reached a grand total of 11,226, which was a record high for an AMA Clinical Convention, and that included 4,574 physicians, which was the third highest physician registration at a Clinical Convention.

Education for Family Practice

Calling it "a document of major importance on a subject of vital significance to the health care of the American public," the House of Delegates endorsed the recommendations of the Ad Hoc Committee on Education for Family Practice and authorized the Council on Medical Education to develop and initiate plans for their implementation. The long report contained the following recommendations:

1. Major efforts should be instituted promptly to encourage the development of new programs for the education of large numbers of family physicians for the future, as described in the body of this report. The educational programs should relate to all levels of medical education, including pre-medical preparation, medical school education, internship and residency training, and continuing medical education. Keynotes should be excellence comparable to programs in other specialties and flexibility to permit the design of programs which will meet the needs and interests of individual physicians.

2. Medical schools and teaching hospitals should be

urged to explore the possibility of developing models of family practice, in cooperation with the practicing profession.

3. New sources of financial assistance should be developed for the support of family practice teaching programs. Substantial funds should be made available for all aspects of the programs, including the conduct of the educational program, the recruitment and training of full-time faculty, the development of facilities and models of family practice, and the conduct of research in patient care and community medicine.

4. Recognition and status equivalent to other medical specialties should be given to family practice. An appropriate system of specialty certification should be provided for those who have completed approved educational programs and have demonstrated their competence as family physicians. The graduate program (i.e., internship-residency program) should be an integrated whole, evaluated for accreditation by one body rather than two.

5. Careful attention should be given to other factors which should make the environment for family practice more favorable and serve as incentives to medical students and young physicians to enter this field.

6. Careful study should be made of the effect of pre-medical programs and the admission procedures, curricula and student evaluation policies of medical schools upon the production of family physicians.

Delegates and other interested AMA members also attended an open hearing Tuesday morning on the report of the Citizens Commission on Graduate Medical Education, which is similar in many respects to the report of the Ad Hoc Committee on Education for Family Practice. The Commission report is still under study by the AMA Board of Trustees and Council on Medical Education. The House of Delegates urged every physician and medical society to study the report (commonly called the "Millis Report"), to evaluate it and to present comments and critique to the Board prior to the next session of the House.

Public Law 89-97

The House adopted a resolution urging that the American Medical Association advise the Department of Health, Education, and Welfare that the present requirements for certification and recertification have proven highly objectionable, unnecessary, and do not contribute to the quality of medical care.

It also recommended that the American Medical Association endeavor to bring about repeal of those

portions of PL 89-97 in which the requirement for physician certification of medical necessity appears.

The resolution concluded by suggesting that the fiscal intermediaries and the American Hospital Association be advised that AMA will be available to assist in the development of appropriate amendments to this legislation. The purpose of this consultation would be to discuss the complexities of the present requirement and to invite participation in the development of amendments to the law which will be professionally acceptable and administratively workable.

The House also adopted a resolution declaring that the AMA strongly support amendment of the Social Security Act, including Title XIX, to permit payments without assignments for medical care of the patient.

The House rejected three resolutions and one report defining usual, customary and reasonable charges. Instead, it adopted a resolution which said that the definitions of the words "usual," "customary" and "reasonable" be considered, within the fundamental framework of individual determination, the responsibility of the constituent state medical societies, with the understanding that the advice and counsel of the AMA be made available to those states requesting such assistance.

Selective Service Proposals

The House adopted a report seeking federal legislation to establish a National Commission on Health Resources and Medical Manpower. The commission would revise the "doctor draft" system and establish physician allocation priorities to maintain a proper balance of health personnel in civilian and government service.

The report, prepared by the Council on National Security, cited three basic flaws in the Selective Service System as it pertains to the selection of physicians for military service: (1) There is no medical group directing the allocation of physicians; (2) There is no medical group directing the priorities to be used for calling physicians to active duty; (3) There is a need for a stronger medical voice within the Department of Defense.

The proposed commission would be appointed by the President with consent of the Senate. It would replace the Health Resources Advisory Committee and the National Advisory Committee to Selective Service.

Prescribing of Drugs

The House adopted a report by the Board of Trustees reaffirming the position of the AMA regarding the prescribing of drugs. The report states:

The present policy of the American Medical Associ-

ation is that physicians should be free to prescribe drugs generically or by brand name for *all* of their patients, whether they are paying, Medicare, or indigent patients—the primary consideration being the best interests of the patient. Medical considerations must be paramount in the selection of drugs. In addition, the physician also has an obligation to be mindful of the economic consequences of the treatment he prescribes.

Choice of a Laboratory

The House adopted a report of the Judicial Council which answered questions which have been raised about laboratory services. The report stated:

Medical considerations, not cost, must be paramount when the physician chooses a laboratory. The physician who disregards quality as the primary criterion or who chooses a laboratory because it provides him with low cost laboratory services on which he charges the patient a profit, is derelict in not acting in the best interests of his patient. However, if reliable quality laboratory services are available at lower cost, the *patient* should have the benefit of the savings.

Statement on Chiropractic

On recommendation of the Board of Trustees, the House adopted a policy statement submitted by the Committee on Quackery. The statement notes "the position of the medical profession that chiropractic is an unscientific cult whose practitioners lack the necessary training and background to diagnose and treat human disease" and pointed out that "decisions by the nation's highest courts [justify] the medical profession's educational program of alerting the nation to the public health threat posed by the cult of chiropractic."

Statement on Alcoholism

The House reaffirmed the 1956 policy statement on admission of alcoholics to general hospitals. The statement urged hospital administrators and medical staffs to look upon alcoholism as a medical problem and to admit patients who are alcoholics to their hospitals for treatment, with such admissions being made after due examination, investigation and consideration of the individual patient. The House, in Las Vegas, recommended more adequate implementation of the 1956 statement and urged that "insurance companies and prepayment plans be encouraged to remove unrealistic limitations on the extent of coverage afforded for the treatment of alcoholism."

Payments for Professional Services

To clarify AMA policies as they now exist, the House adopted the following eight-point statement regarding payment for professional medical services:

1. It is proper for the physician to establish the fee which he charges to any patient for the professional

service rendered, with recognition of the fact that a duly constituted committee of his peers may appropriately review and pass upon the equity and justice of his charge.

2. It is proper for third party agencies to make payment of professional medical fees in behalf of patients, with recognition of the fact that the service of the physician has been to the patient and the liability for payment rests primarily with the patient or his family.

3. It is proper for a physician to work cooperatively with other physicians in a team approach to the provision of medical service, with recognition of the fact that each cooperating physician is entitled to compensation according to the value of his services, and that the charges attributable to each physician's service shall be made clearly known to the patient.

4. It is proper for a physician who provides personal supervision and direction for a physician-in-training to charge for the professional medical service rendered.

5. A physician should not enter into a contract or agreement with a hospital whereby the hospital acts as the agent for a physician unless it is with the consent of the physician and of the medical staff. The physician and the medical staff, as principals, should not approve any contract whose terms or conditions are inconsistent with the Principles of Medical Ethics and established policy of the American Medical Association.

6. Physicians, collectively in hospitals, may properly establish special medical staff funds, wholly under their own control, which they may support as they see fit and disburse as they may agree.

7. Fees for professional medical services are properly paid only to the responsible physicians and may not be appropriated by any other person or agency.

8. The physician is the sole arbiter as to the ways in which he may dispose of his professional income, without duress, consistent with the laws of the land and the Principles of Medical Ethics of this Association.

Compensation for House Officers

The House approved the first four sections of a joint report by the Council on Medical Education and Council on Medical Service. Those sections provided new guidelines on the utilization of private patients in teaching programs; recommended principles to govern the assignment of professional responsibility of house officers for the care of paying patients; presented interpretations of the 1961 statements by the House concerning remuneration of house officers and the increasing responsibility of the medical profession for the development of appropriate methods of financial support for interns and residents, and recommended a statement to guide medical staffs in the development of additional funds to supplement, if necessary, those from hospital sources.

The House then modified or added the final four sections as follows:

E. The presently published provisions for payment under Part A, Title 18, Public Law 89-97 for services rendered to beneficiaries by interns and residents, and

under Part B, Title 18, Public Law 89-97 for services rendered by attending physicians supervising interns and residents, are compatible with the organization and administration of programs of graduate medical education according to the standards of the American Medical Association. The principles embodied in these provisions should uniformly apply to regulations governing all other third party medical care plans.

F. It is recommended that sources and amount of compensation for house officers should be determined by local agreement and implemented in accordance with state laws and the ethical principles and policy positions of the American Medical Association.

G. The above principles should be widely publicized so that they may be understood and implemented in good faith by all concerned.

H. The broad and complex nature of the problems in the financial area is recognized, and continued studies and reports thereon by the Council on Medical Service are encouraged. These should include staff compensation, methods of fund collection, control and disposition, and other pertinent and related matters.

Use of Terms "Ethical" and "Unethical"

The Judicial Council, which had been asked to comment on use of the terms "ethical" and "unethical," submitted the following report which was adopted by the House:

Historically, the term "ethical" has been used in opinions and reports of the Judicial Council and in resolutions adopted by the House of Delegates to refer to matters involving (1) moral principles or practices; (2) customs and usages of the medical profession; and (3) matters of policy not necessarily involving issues of morality in the practice of medicine. The term "unethical" has been used to refer to conduct which fails to conform to these professional standards, customs and usages, or policies, as interpreted by the American Medical Association.

Unethical conduct involving *moral principles*, values and duties calls for disciplinary action such as censure, suspension, or expulsion from medical society membership.

Failure to conform to the *customs and usages* of the medical profession may call for disciplinary action depending upon the particular circumstances involved, local attitudes, and how the conduct in question may reflect upon the dignity of and respect for the medical profession.

In matters strictly of a policy nature, a physician who disagrees with the position of the American Medical Association is entitled to freedom and protection in his point of view.

Other Actions

In considering 63 resolutions, 22 Board reports and a wide variety of additional reports and materials from councils and committees, the House of Delegates also:

Approved establishment of a new *Committee on Con-*

tinuing Medical Education but also urged that lines of authority be clearly defined by the Board of Trustees in consultation with the Council on Medical Education in order to avoid duplication of responsibilities already assigned to the Council;

Instructed AMA members of the Joint Commission on Accreditation of Hospitals to express grave concern regarding the accreditation of hospitals in which *laboratories* are directed by non-physicians or physicians not adequately qualified in laboratory medicine;

Passed two resolutions opposing the "dual fee" practice of determining the rate of payment for a physician's services solely on the basis of his type of practice;

Approved a Board report recommending that *Social Security* laws be amended so that physicians entering the program for the first time may obtain earlier eligibility and improved benefits;

Recognized the increasing importance of *medical society review committees*, reaffirmed the guidelines published in the November 29, 1965, issue of JAMA and endorsed additional principles recommended by the Council on Medical Service;

Urged continuing, vigorous effort to dissuade local officials from demanding that physicians sign civil rights *compliance statements* that are not required by law or by federal directives;

Recommended that state medical societies seek the passage of state legislation which would provide a physician who serves on a *utilization review committee* immunity from litigation arising from the activities of such committees;

Asked that the Board of Trustees direct the Council on Legislative Activities to continue to pursue with committees of Congress the need for amending the *Self-Employed Individuals Tax Act* to provide self-employed individuals with opportunities for deferring current earnings and taxes comparable to opportunities presently enjoyed by employed individuals;

Requested the Bureau of the Budget to modify the cost accounting system of *Veterans' Hospitals* to permit comparison with cost accounting in community hospitals to the end that economy, efficiency and patient care can be properly assessed in Veterans' Hospitals;

Reaffirmed its support of the principle that every ethical licensed doctor of medicine who needs and desires them should have *staff privileges*, commensurate with his training and skill, in at least one accredited community hospital;

Recommended that each *hospital* should have at least one voting doctor of medicine member on its *Governing Board* who, preferably, should either be appointed or elected by the hospital medical staff from its membership;

Pointed out that there is a definite need for utilization committees and declared that *tax supported hospitals* and private hospitals should be governed by the same utilization standards;

Approved Board recommendations that "the AMA support the need for a significant improvement in the income of the *registered nurse*" and that "the AMA continue to support in principle all current nationally

approved educational programs for nurses";

Adopted a resolution that the AMA take measures to insure the attention of medical societies to the need for appropriate utilization of *retired physicians and inactive nurses*;

Passed a resolution on the determination of *elderly applicants'* eligibility for automobile liability insurance and driver licensure which said that "although physicians are willing to examine applicants and determine whether or not the applicant meets specified physical standards for automobile liability insurance or for licenses to operate motor vehicles, the determination of what standards should be required or whether the driver is insurable and should be licensed to drive is the responsibility of the insurance companies concerned and of the state agencies issuing licenses, respectively";

Rescinded Resolution 104 which had been adopted by the House in June, 1966;

Endorsed the principle of *free choice* of physician and medical facility under Title XIX of Public Law 89-97;

Urged that the AMA continue to promote constructive legislation improving *existing governmental health plans* and continue to offer constructive advice;

Authorized the Board of Trustees to continue the *AMA Members Disability Program* beyond August 31, 1967; make every effort to continue the program with the same premium-benefit structure; clarify the existing program, and, if necessary, renegotiate a revised program which will be financially sound and will provide the best possible benefits and protection for present and future participants;

Agreed with the Board that, effective January 1, 1967, the AMA should discontinue paying for the rental of the *TWX equipment* in state medical society offices;

Recommended that *driver education* should be an integral part of the secondary school curriculum and be offered to all students;

Approved a Council on Medical Service report providing guidelines for collaboration of physician, social worker and lawyer in helping the *unmarried mother* and her child, and;

Referred to the Board, for consideration and appropriate implementation, a resolution urging the AMA to expand its programs and studies in the field of *crime prevention*.

Awards and Presentations

Contributions totaling more than \$500,000 were presented on Monday to the American Medical Association Education and Research Foundation. They were as follows: Merck Sharp and Dohme, \$100,000; California Medical Association, \$207,985; Illinois State Medical Society, \$185,000; Utah Medical Association, \$12,957.50; Medical and Chirurgical Faculty of Maryland, \$9,110, and American Urological Association, \$1,000.

LUCIEN R. PYLE, M.D.

JOHN C. MITCHELL, M.D.

Delegates From Kansas



Personalities—IN KANSAS MEDICINE

William S. Simpson, Topeka, was elected president of the Kansas Area of the National Council on Alcoholism at the council's annual business meeting held in Topeka in December.

In November, **Sam Zweifel**, Kingman, was installed as president of the Kansas Chapter of the American Academy of General Practice in ceremonies held during the annual convention of the Kansas chapter in Overland Park.

Edmer Beebe was recently elected chief of staff of the Olathe Community Hospital, replacing **William L. Matthew** who had served for the past two years. Other officers elected were **Harry B. Neis**, vice president, and **Robert E. Delphia**, secretary-treasurer. Dr. Matthew was appointed chairman of the credential committee. Serving with him on the committee are **G. J. Pierron** and **Dale E. Darnell**.

Harry J. Veatch, who retired in December after 45 years in practice in Pittsburg, was honored by the members of the Crawford County Medical Society at a surprise dinner held at the Besse Motor Hotel in Pittsburg. **C. H. Benage** was master of ceremonies and, in behalf of the county society, presented Dr. Veatch with a plaque in appreciation of his years of service to the medical profession. Dr. and Mrs. Veatch plan to move to Branson, Missouri, soon.

The board of directors of the Topeka Blood Bank elected **Dean Peterson** president for 1967 at their annual meeting in November. Members of the board are **Theodore Young**, **W. Wike Scammon**, **Benson**

Powell, II, **John Crary**, **Robert Cotton** and **William Roy**. Retiring board members include **Charles H. Hermann** and **Richard Fields**.

Paul L. Beiderwell, Belleville, retired the first of January, after 27 years of practice in that community.

New officers of Mt. Carmel Hospital, Pittsburg, are **William T. Braun**, chief of staff and **Dick B. McKee**, secretary-treasurer. **George W. Pogson** is retiring chief of staff.

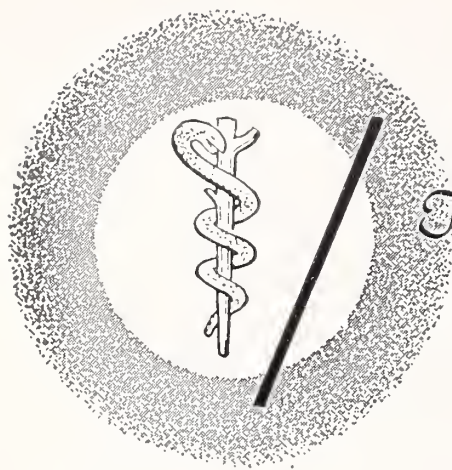
Gordon B. Sekavec, Oakley, was recently appointed county health officer by the county commissioners of Logan county, succeeding **James J. Marchbanks**, Oakley, who resigned the position.

The Wichita Junior Bar Association held its annual medical-legal seminar in December. **C. J. Kurth**, Wichita, spoke to the group on "Distinguishing Between Traumatic Neurosis and Malingering," and "Use and Abuse of Psychological Testing."

Marion J. Renner, Goodland, participated in the annual postgraduate course on fractures and joint injuries at the University of Colorado Medical Center, Denver, in November.

Donald L. Rose, University of Kansas Medical Center, spoke at the annual meeting of the Southern Medical Association held in Washington, D. C., in November.

(Continued on page 35)



The Kansas Press Looks at Medicine

Editor's Note. In this section the JOURNAL reproduces editorials relating to medicine which have appeared in the lay press. An effort is made to include both favorable and unfavorable comments, and the Editorial Board in no instance assumes responsibility for the opinions expressed.

"TO MY PATIENTS"

Since some of our physician friends have had more than their share of questions from patients since medicare, we reprint the following from the St. Louis County Medical Society bulletin:

I Did Not Write the Medicare Bill.

I Am Not Sure I Understand It.

I Am Not a Government Official.

I Was Not Trained in Political Economy.

If you are not satisfied with your present, 1) medical costs or services, 2) hospital availabilities or cost, or 3) the cost of your drugs, there isn't much reason to talk it over with me—I am probably as dissatisfied as you are and probably much more confused.

There isn't much point in discussing with me the problems you have as a result of getting a whole new system of laws (regarding your medical care) to live by, because I don't yet understand what it is all about either.

May I humbly suggest, if you have a problem (and I sincerely hope you do not) that you write your Representative or Senator in the United States Congress. Most of them knew enough about the law to vote for it, and perhaps since they knew so much about it when it was voted on, they can give you answers to all your questions now. I can't.

Since my profession (The Science of the Healing Arts) is coming more and more under the control of the elected and appointed public officials in Washington, D. C., please do not expect me to become less and less a Doctor. I can't. I won't. Therefore, the economic-legal-political questions that are troubling you should be taken to the experts in those fields for an appropriate answer.

In the meantime, remember me as the one who treats your arthritis, your blood pressure, your aches and pains. The one who is concerned with your long and comfortable physical life and—I hope—your

mental stability in these trying hours.—*Atchison Daily Globe*, December 11, 1966.

A BREATH OF FRESH AIR FROM THE AMA

A breath of fresh air, hopeful as a spring breeze, blew through the solemn chamber of the House of Delegates of the American Medical Association last week.

A proposal by Dr. Charles L. Hudson, AMA's president, would send volunteer medical teams into slum districts and areas of racial violence.

The president "envision[s] teams of doctors going into areas such as the Watts district of Los Angeles and setting up immunization programs or whatever else is needed in a particular area."

Dr. Hudson told the policy-making group:

"I propose that the AMA and state and county medical societies launch a continuing program under predominantly private auspices to improve existing health care services and establish new services where they do not exist for all persons of whatever age, race, creed or color. I consider this kind of program a top priority AMA obligation."

A resident of Cleveland, Dr. Hudson noted the recent rioting in that city and said, "I want to find out whether my county medical society has interested itself in the medical care of these disadvantaged people."

This approach is fresh, not so much because it furthers the cooperation of private medical groups with public health facilities as because it focuses its attention on the people who need help, and not on the means of financing such help.

Many doctors, such as Charles Hudson, have argued that such programs as medicare can be swallowed as they are now constituted, but the question remains where the philosophy of social insurance will lead.

His proposal is one answer.—*Salina Journal*, December 6, 1966.



Book REVIEWS

ELECTROCARDIOGRAPHY AND VECTOR-CARDIOGRAPHY. INSTRUMENTATION, FUNDAMENTALS AND CLINICAL APPLICATION, by Lawrence E. Lamb, M.D. W. B. Saunders Company, Philadelphia and London, 1965. 609 pages illustrated. \$17.00.

Several good textbooks of electrocardiography are available and many now contain vectorcardiographic information as well. A new book in this field is necessary only if it is outstanding or offers new information. This book does not fall into such a category. The wide experience of the author in evaluation of airforce personnel has allowed him to select a wide variety of electrocardiographic examples, and in general, the quality of these tracings is good and they are well reproduced. Illustrations in general are good. The author's statement in the preface that the use of electrocardiograms in a serial fashion often is of much greater value than the isolated electrocardiogram again bears emphasis. The presence of previous excellent texts in this field make the addition of this book somewhat redundant. The quality of the illustrations, and the high quality electrocardiographic reproductions are its best recommendation.—*E.W.C.*

EMERGENCY CARE OF THE SICK AND INJURED, by the Committee on Trauma, American College of Surgeons. Edited by Robert H. Kennedy, M.D. W. B. Saunders Company, Philadelphia, 1966. 128 pages. \$2.00.

This is a good manual for the training of doctors

and allied personnel concerned with the emergency care treatment of patients.

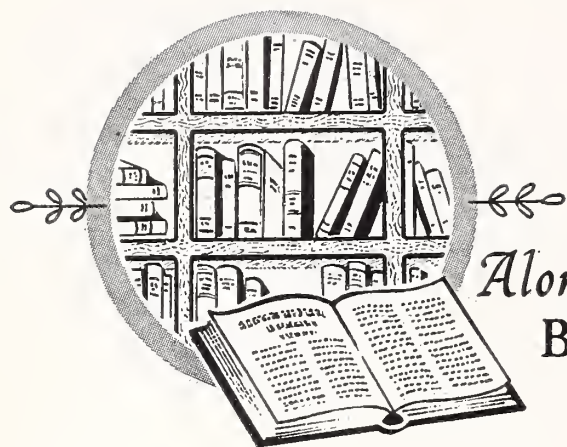
Individual members of the Committee on Trauma of the American College of Surgeons have done an excellent job of preparing this manual. Each chapter is well written and the subjects are well covered. Among the subjects covered are cardiac arrest, shock, burns and exposure to cold, bleeding, head and neck injuries, chest injuries, abdominal injuries and fractures.

I think this would be an excellent manual for the use of the intern and resident and other personnel working in an emergency room.—*W.H.Z.*

CARDIAC EVALUATION IN NORMAL INFANTS by Robert F. Ziegler, M.D. C. V. Mosby Company, St. Louis, 1965. 170 pages illustrated. \$12.75.

With more and more congenital heart lesions surgically correctable and at an earlier age, prompt diagnosis of such lesions early in life becomes increasingly important. This book is devoted to the differentiation between the normal and abnormal cardiovascular system in infants. In order to recognize the abnormal, it is axiomatic that one understands the normal. This relatively small book is well indexed, contains a rather large bibliography and is readably written. The radiologic evaluation of heart size in infants, the discussion of the electrocardiogram in the newborn and the section on the recognition of heart failure in the newborn are especially good.

This book is highly recommended for all physicians who deal with infants.—*E.W.C.*

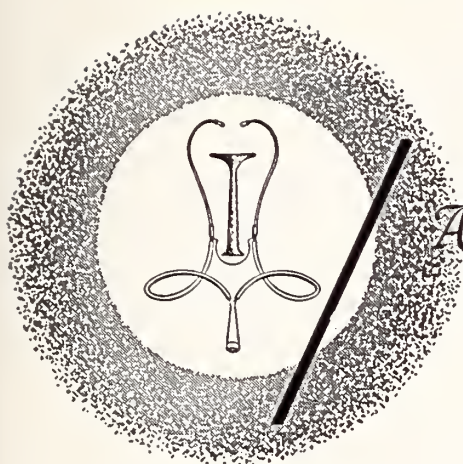


Along The BOOKSHELF

Clendening Medical Library

RECENT ACQUISITIONS

- Andrew, Warren. Microfabric of man. . . Year Book Medical Publishers, 1966.
- Babson, Sydney Gorham. Primer on prematurity and high-risk pregnancy. Mosby, 1966.
- Benson, Ralph Criswell. Handbook of obstetrics and gynecology. 2d ed. Lange, 1966.
- Boyd, William. The spontaneous regression of cancer. Thomas, 1966.
- Calman, Carl H. Atlas of hernia repair. Mosby, 1966.
- Craig, William Stuart McRae. Care of the newly born infant. 3d ed. Williams and Wilkins, 1966.
- Curran, R. C. Color atlas of histopathology. Oxford Univ. Press, 1966.
- Danforth, David N., editor. Textbook of obstetrics and gynecology. Hoeber, 1966.
- DeGroot, Leslie J., editor. Medical care; social and organizational aspects. Thomas, 1966.
- Edwards, Frederick Ronald. Foundations of thoracic surgery. Livingston, 1966.
- Eshom, Myreta. Medical secretary's manual. Appleton-Century-Crofts, 1966.
- Garner, Harry H. Psychosomatic management of the patient with malignancy. Thomas, 1966.
- Geist, Harold. The psychological aspects of rheumatoid arthritis. Thomas, 1966.
- Goldzieher, Joseph William. Oral contraception: mechanism and management. Thomas, 1966.
- International Congress of Physical Medicine, 4th, Paris, 1964. Proceedings. Excerpta Medica Foundation, 1966.
- Goodman, Floyd G. Questions and answers in orthopaedics. . . Mosby, 1966.
- Harrison, Saul I. A guide to psychotherapy. Little, Brown, 1966.
- Hsia, I'Jung. Lectures in medical genetics. . . Year Book, 1966.
- International Society for Clinical Electoretinography. Clinical electoretinography. . . Pergamon Press, 1966.
- Katz, Bernhard. Nerve, muscle, and synapse. McGraw-Hill, 1966.
- Kiloh, Leslie Gordon. Clinical electroencephalography. 2d ed. Butterworth, 1966.
- Knowles, John H., editor. The teaching hospital. . . Harvard University Press, 1966.
- Lehmann, Hermann. Man's haemoglobins. . . Lippincott, 1966.
- Leonard, John Cyril. A guide to cardiology. 2d ed. Williams and Wilkins, 1966.
- Littler, T. R. Understanding rheumatism. Lippincott, 1966.
- MacColl, William A. Group practice & prepayment of medical care. Public Affairs Press, 1966.
- Neter, Erwin. Medical microbiology. 5th ed. Davis, 1966.
- Pavlovskii, Evengii Nikanorovich. Natural nidity of transmissible diseases. . . University of Illinois Press, 1966.
- Pfuetze, Karl H. Clinical tuberculosis. . . Thomas, 1966.
- Plum, Fred. The diagnosis of stupor and coma. Davis, 1966.
- Prier, James E., editor. Basic medical virology. Williams & Wilkins, 1966.
- Quick, Armand James. Hemorrhagic diseases and thrombosis. 2d ed. Lea & Febiger, 1966.
- Schuknecht, Harold Frederick. Stereoscopic atlas of mastoidotympanoplastic surgery. Mosby, 1966.
- Shaw, Charles R. The psychiatric disorders of childhood. Appleton-Century-Crofts, 1966.
- Shepherd, Michael. Psychiatric illness in general practice. Oxford Univ. Press, 1966.
- Stewart, William D. Synopsis of dermatology. Mosby, 1966.
- Symposium on the Regulation of Metabolic Processes in Mitochondria. Bari, 1965. Regulation of metabolic processes in mitochondria. Elsevier Pub. Co., 1966.
- U. S. Public Health Service. Division of Chronic Disease. Obesity and Health. . . U. S. Gov't Printing Office, 1966.



Announcements

Professional meetings, conferences, and postgraduate courses of national importance are listed for the DOCTOR'S CALENDAR. Notice of the session is posted in advance to allow the physician time to make preparations.

JANUARY

- Jan. 22-23 First National Congress on Socio-Economics of Health Care, sponsored by the Council on Medical Service and the Division of Socio-Economic Activities of the AMA, Palmer House, Chicago. For information write the Division of Socio-Economic Activities, AMA, 535 N. Dearborn, Chicago 60610.
- Jan. 23-25 Society of Thoracic Surgeons, Muehlebach Hotel, Kansas City, Missouri. Write: Francis X. Byron, M.D., City of Hope Medical Center, 1500 E. Duarte Road, Duarte, California 91010.

FEBRUARY

- Feb. 5-7 Seminars on the Newborn, Aspen Institute for Humanistic Studies. Write: Joseph Butterfield, M.D., Children's Hospital, 19th Ave. at Downing, Denver 80218.
- Feb. 10-11 Tenth Annual Cardiac Symposium, Del Webb TowneHouse, Phoenix. Write: Arizona Heart Association, 2824 N. 16th St., Phoenix 85006.
- Feb. 10-12 First Annual Mid-Winter Cancer Seminar, The American Cancer Society, Colorado Division, Lodge At Vail, Vail, Colorado. Write: American Cancer Society, Colorado Division, Inc., 1764 Gilpin St., Denver 80218.
- Feb. 15-19 American College of Cardiology, annual session, Washington Hilton Hotel, Washington, D. C. Write: William D. Nelligan, Exec. Dir., American College of Cardiology, 9650 Rockville Pike, Washington, D. C. 20014.
- Feb. 16 Emanuel Friedman Lecture, Children's Hospital, Denver. Edward A. Mortimer, M.D., Univ. of New Mexico, guest lecturer. Write: Joseph Butterfield, M.D.,

Children's Hospital, 19th Ave. at Downing, Denver 80218.

- Feb. 20-25 Annual Meeting, American Academy of Forensic Sciences, Princess Kaiulani Hotel, Honolulu. Write: Samuel R. Gerber, M.D., 2121 Adelbert Road, Cleveland 44106.
- Feb. 24 American College of Physicians, Kansas Chapter, Kansas City, Kansas. Write ACP Governor: Sloan J. Wilson, M.D., University of Kansas Medical Center, Kansas City, Kansas 66103.
- Feb. 28-Mar. 3 Winter Clinic, Colorado Medical Society, Brown Palace Hotel, Denver. Write the Colorado Medical Society, 1809 E. 18th Ave., Denver 80218.

POSTGRADUATE COURSES

University of Kansas:

- Jan. 23-24 *Gynecology and Obstetrics*
 Mar. 6-8 *Pediatrics*
 Mar. 9-10 *Radiology and Radioactive Isotopes*
 Mar. 13-14 *Difficult Electrocardiographic Diagnoses*

For further information write the Department of Postgraduate Medical Education, University of Kansas School of Medicine, Rainbow Blvd. at 39th St., Kansas City, Kansas 66103.

University of Colorado:

- Feb. 6-10 *Management and Care of Respiratory Insufficiency* (offered three times a year; limited to 10 registrants for each course)

For further information, write the Office of Postgraduate Medical Education, University of Colorado School of Medicine, 4200 E. Ninth Avenue, Denver 80220.

- Feb. 19 *The Sociopath in Our Modern Society*, Neurological Hospital, Kansas City, Missouri. Gene L. Usdin, M.D., New Orleans, guest lecturer. Write: Neurological Hospital, 2625 W. Paseo, Kansas City, Missouri 64108.

KANSAS STATE DEPARTMENT OF HEALTH						
TOPEKA, KANSAS						
Division of Preventable Diseases—Division of Vital Statistics—Kansas Morbidity Incidence						
Summary of Cases Reported in September, 1966 and 1965						
Diseases	September			January-September Inclusive		
	1966	1965	5-Year Median 1962-1966	1966	1965	5-Year Median 1962-1966
Amebiasis	3	—	1	11	3	21
Aseptic meningitis	6	—	4	7	3	7
Brucellosis	2	—	—	9	3	6
Diphtheria	—	—	—	—	1	—
Encephalitis, prim., infect.	26	15	15	37	30	30
Encephalitis, post-infect.	—	—	*	—	4	*
Gonorrhea	363	209	264	2376	1897	2191
Hepatitis, infectious	8	35	27	131	370	370
Meningococcal meningitis	1	—	—	14	13	12
Pertussis	—	8	3	11	20	20
Poliomyelitis	—	—	—	—	—	—
Rheumatic fever	—	—	—	—	2	2
Salmonellosis	16	54	28	189	236	198
Scarlet fever	7	8	8	90	67	90
Shigellosis	3	12	12	52	102	52
Streptococcal infections	87	169	93	1799	2344	1231
Syphilis	119	66	72	919	656	803
Tinea capitis	7	6	7	37	50	56
Tuberculosis	18	27	27	218	195	210
Tularemia	—	—	—	—	2	4
Typhoid fever	1	—	—	6	—	2

* Statistics for 5-year median not available

ISONIAZID PROPHYLAXIS FOR
PEDIATRIC TUBERCULIN REACTORS

Primary tuberculosis in children is usually a mild inapparent infection but its sequelae, including progressive pulmonary tuberculosis, meningitis and skeletal tuberculosis, can be severely damaging and often fatal. Soon after the introduction of isoniazid, clinical observations indicated that these sequelae rarely developed among children who were positive tuberculin reactors and whose treatment included isoniazid.

Stemming from these observations, in January, 1955, 33 pediatric clinics throughout the country began a study of 2,570 children with asymptomatic primary tuberculosis. Half of the children received a small daily dose of isoniazid for a year, while the other half received a placebo.

The results of this study, documented to the present date, have further changed the emphasis in tuberculosis control from treatment to prevention. From the information now available, the following is apparent:

1. Practically all of the immediate complications of primary tuberculosis can be prevented by a 12-month course of a small daily dose of isoniazid.
 2. Isoniazid can prevent, not merely postpone, complications later in life.
- This knowledge has been incorporated into recommendations for chemoprophylaxis of tuberculosis by the American College of Chest Physicians and approved by the Committee on Therapy of the American Thoracic Society. The portion of the recommendations for chemoprophylaxis for asymptomatic tuberculin reactors in the pediatric group takes into consideration such factors as the varying risk of developing active tuberculosis at certain ages (pre-school and adolescent reactors are at greatest risk), the degree of exposure, extent of induration, living conditions, and the extent of known tuberculosis in the community.
- These recommendations are an integral part of the Kansas Tuberculosis Control Program, which has as its ultimate goal the practical eradication of this disease. Following is the portion of the recommendations

for chemoprophylaxis of children who react to the tuberculin skin test:

POSITIVE TUBERCULIN TEST—No Evidence of Pulmonary Disease

A. Recent Tuberculin converter—(one year or less)

Any person any age at high risk, provide chemotherapy with INH

B. Positive Tuberculin Test—Unknown duration—No index case

1. Age 0-5 years—Offer Chemoprophylaxis with INH
2. Age 5-12 years—Risk lower and Rx depends on degree of exposure and living conditions.
3. Age 13-21 years—Risk great at this age of developing active TB—Rx if tuberculin positive with 8-10 mm's induration and over.

C. Positive Tuberculin—No evidence of disease—Excessive Exposure

1. Positive Tuberculin—Recent Converter—(See A above)
2. Positive Tuberculin—duration unknown—(See B above)
3. With intimate exposure to TB, household contact, close associate—high risk of developing TB lessened by prophylactic INH. Negative reactors may also be included in this category.

Personalities

(Continued from page 29)

Phil Godwin was elected chief of staff of Lawrence Memorial Hospital in December. Other new officers are Howard Wilcox, vice chief of staff and Robert Hughes, secretary. Serving on the executive committee are Byron Walters, retiring chief of staff, George Learned, and Alex Mitchell.

Nels M. Strandjord, University of Kansas Medical Center, is one of the new group of physicians who have volunteered their services in South Viet Nam. He will spend two months in hospitals there, helping South Vietnamese civilians. The volunteer program is sponsored by the U. S. Agency for International Development and the American Medical Association.

After 47 years of practice in Franklin, Oris G. Keller announced his retirement in November.

WINTER SUNBURN

Why talk about sunburn in midwinter?

Because outdoor winter sports, especially skiing, sometimes are accompanied by sunburn fully as severe as that of swimmers at the seashore in midsummer.

Of course, the winter sunburn is confined to face and neck, rather than most of the body, but it can be just as painful on the exposed parts of the body as summer sunburn.

Today's Health, the family magazine of the American Medical Association, points out that the sunburning effect of sunshine is due in large part to the ultraviolet radiation that accompanies the visible light.

These ultraviolet wave lengths, intense in outer space, are partially filtered by the atmosphere as they reach the earth. In the higher altitudes, the sunlight does not pass through so deep a layer of atmosphere, and so the burning effect is more intense. And another factor is reflected radiation bouncing off the bright snow cover.

Since overexposure to sunlight is, in general, injurious and hastens the aging of skin, purposeful exposure should be avoided. Protective clothing should be and usually is worn in winter, except in the heat of spring skiing.

There are a number of sunscreens agents which are helpful when applied to the skin. These include preparations containing benzophenones and preparations consisting of 15 per cent para-amino benzoic acid (PABA) in a cream base, as well as preparations containing physical sunscreens such as zinc oxide and titanium dioxide.

In general, the protective agents must be applied frequently because perspiration, rubbing and accidental falls into the snow will remove them.

Experienced skiers already have learned to beware of winter sunburn. Those heading for the slopes for the first time this season are cautioned to guard against burning.—*AMA Health and Safety Tips*.

Buy

U.S. Savings Bonds



ADELBERT R. CHAMBERS, M.D.

A. R. Chambers, 72, died at his home in Iola on November 19, 1966.

Dr. Chambers was born March 15, 1894, in Lincoln County. He served in the armed forces during World War I and at the end of the war enrolled at the University of Kansas School of Medicine. He was graduated as a doctor of medicine in 1923. He began his practice in Humboldt in 1924 and moved to Iola in 1928. Dr. Chambers served in the Kansas Legislature as representative from his county for two terms, and was active in a variety of civic and fraternal organizations.¹

Surviving him are his wife and three daughters.

ALLEN C. DINGUS, M.D.

Allen Dingus, Yates Center, died on December 5, 1966, at the Allen County Hospital in Iola. He was 90 years old and had been a practicing physician in Yates Center 59 years.

Born August 1, 1876, at Mound City, he had lived in Yates Center since 1907. He attended Kansas State Teachers College at Emporia and was graduated from the University College of Medicine in Kansas City, Missouri, on April 23, 1907. He was a member of the Masonic, Eastern Star and Scottish Rite bodies, as well as other civic and fraternal organizations.

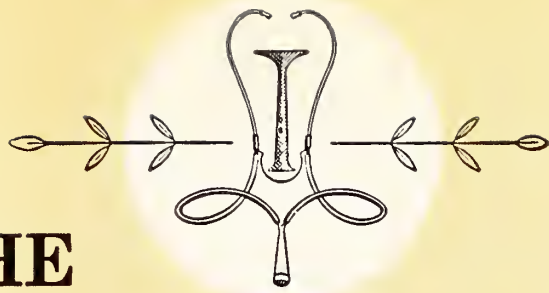
Dr. Dingus is survived by his wife.

ROY H. EDMISTON, M.D.

Roy H. Edmiston, 80, Lawrence, died on November 28, 1966, at Lawrence Memorial Hospital.

Dr. Edmiston was born February 16, 1886, at Americus. He received his medical degree from the University of Kansas School of Medicine in 1917. He was a physician in Lawrence for 33 years and served Watkins Memorial Hospital for several years, later becoming a consultant. He retired from practice in 1952. He was a veteran of World War I. During World War II he was medical advisor to the Douglas County Draft Board.

He is survived by two daughters.



THE
Journal

U.C. MEDICAL CENTER LIBRARY

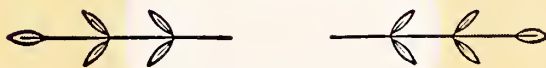
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San Francisco 22,

OF THE

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FEBRUARY
1967



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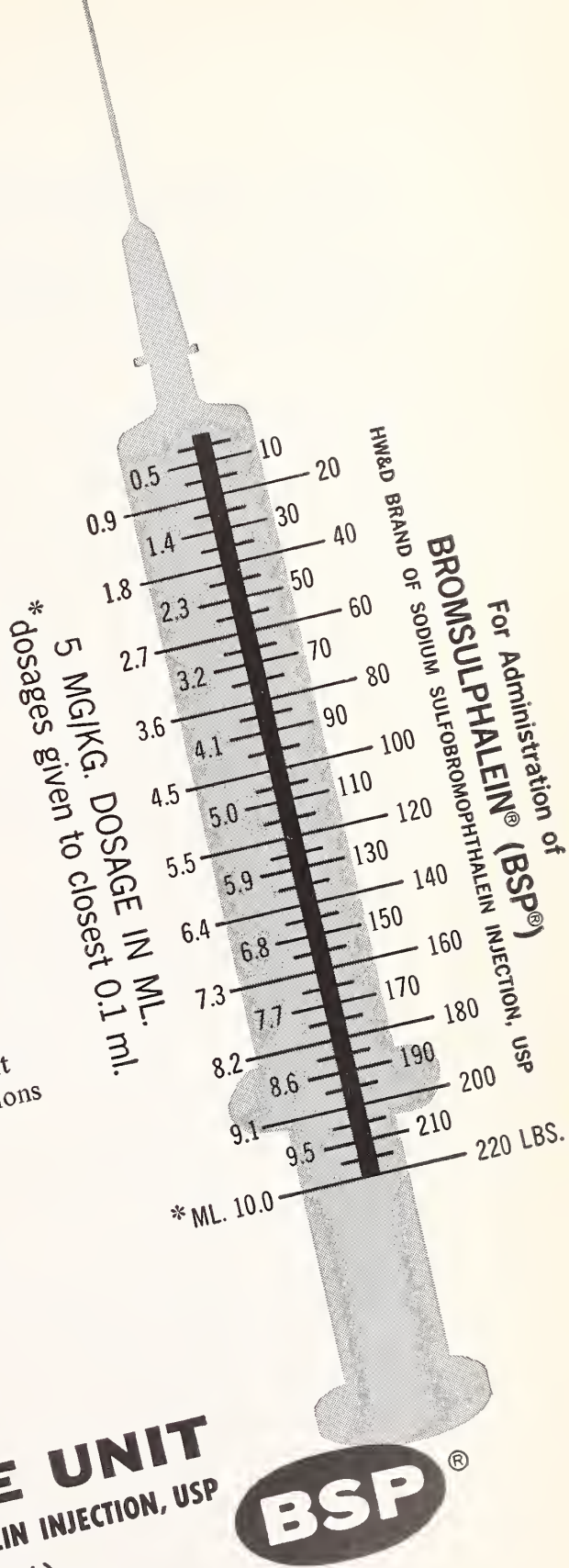
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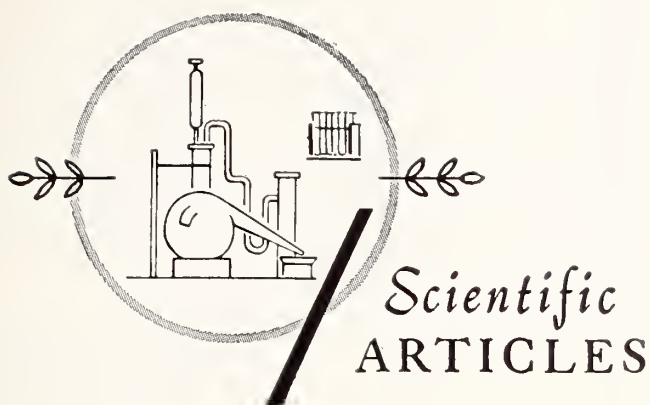
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Gastric Complications

Ischemic Necrosis of the Gastric Remnant: A Rare Complication of Subtotal Gastrectomy

ADOLPH N. PELLEGRINI, M.D., F.A.C.S.,

LOUIS J. CENNI, M.D., F.A.C.S., and VICENTE H. H. Po, M.D., Topeka*

CUTLER AND ZOLLINGER, since 1949, had warned against ischemic changes of the proximal gastric remnant in subtotal gastrectomy. They related such possible development to ligation of the left gastric artery near its origin from the celiac axis.

More recent textbooks of Surgery (*Artz and Hardy*, 1961; *Harkins and Nyhus*, 1962) emphasize concomitant splenectomy performed at time of high gastrectomy as an important etiological factor of this complication. However ischemic necrosis of the gastric stump has been reported also without splenectomy.

By contrast, Wangenstein, Hinton and Localio, and Wisick did not encounter ischemic necrosis of the gastric stump in large series of high gastric resections, in which the left gastric artery was ligated near the celiac axis, and none, or only one, of the short gastric vessels was preserved.

Thompson reported four cases of ischemic gangrene among all gastrectomies done in two years at the University of Michigan Medical Center. Kilgore *et al.* found two such instances in reviewing 604 cases of gastric resection at the University of Mississippi Medical Center. Yovanovitch reported an incidence of four in 2,000 personal gastrectomies.

Reports which followed the initial description of Rutter in 1953, have been contributed by Spencer,

Stuart and Jordan, Fell *et al.*, Cosebolt, Jackson, Thompson, Kilgore *et al.* and Rodgers. In all, 21 cases have been reported since Rutter's monograph.

In these 21 cases, total necrosis occurred in ten, partial necrosis in six, and the operative or autopsy findings were not specified in five. Age of patients

An instance of ischemic gangrene of the proximal stump of the stomach, following subtotal gastrectomy, is presented. Recent reports of this rare complication are reviewed. The anatomical basis of this complication is discussed, and means of prevention brought to attention of the surgeon.

ranged between 49 and 83 years. The primary indication for gastrectomy was benign ulcer in 12 cases, carcinoma of the stomach in five, sarcoma in one, and not stated in three.

The type of gastric surgery performed included ten Billroth II, six Billroth I, one segmental resection, and not specified in four. In one instance, total gastrectomy was performed at once, upon recognition of developing ischemic changes of the gastric stump, with survival of the patient (Thompson).

* From the Surgical Service, Veterans Administration Hospital, Topeka.

Among the 21 patients reviewed, the left gastric artery was ligated near the celiac axis in 15. Splenectomy was performed in 13 patients. The splenic artery was ligated, supposedly without splenectomy, in two cases. Drainage was used in nine. The gastric stump was reported as appearing normal, at time of closure of the abdomen, in nine cases, and relatively ischemic in five. Necrotic discharge from the epigastrium became evident between 36 hours and 15 days postoperatively.

Reoperation was performed in 12 patients. This consisted in total gastrectomy with esophago-jejunostomy in five, subtotal gastrectomy in one, closure of the perforation in two, simple feeding jejunostomy in four. The Roux-en-y gastro-jejunostomy was used in three cases. No reoperation was performed in five patients, and no statement is given in four. Only four patients survived.

Case Report

A 67-year-old, arteriosclerotic and emphysematous white male entered Topeka Veterans Administration Hospital because of recurrence of peptic ulcer symptoms. Radiologically demonstrated duodenal ulcer had been present for 16 years, and bleeding had occurred nine years previously. Radical perineal prostatectomy for circumscribed adenocarcinoma had been performed in 1964. Shortly after admission, hematemesis and melena occurred, proving unresponsive to blood replacement and other therapy. At laparotomy a huge justa-esophageal benign ulcer of the lesser curvature was found, requiring a 75 per cent sleeve subtotal gastrectomy, followed by Billroth II-Hoffmeister retrocolic gastro-jejunostomy. The left gastric artery was ligated at the celiac axis. Due to retractor injury to the spleen, with active hemorrhage, splenectomy was performed. Vascularity of the gastric remnant was judged to be normal at time of closure. The right and left subphrenic spaces were drained.

After a stormy immediate postoperative course due to pulmonary complications, requiring tracheostomy, antibiotics and hydrocortisone, the patient's condition seemed to stabilize. Six days postoperatively, a profuse brown drainage from the left upper quadrant was observed. Cultures of this exudate grew *Enterococci* and *Pseudomonas*. Its amylase content was 600 Somogyi Units. The patient's temperature was 101° F. The leukocyte count rose to 30,000 per cu mm., per cent neutrophils. Intravenous fluids were restarted, and the Levine tube reinserted. Methylene blue injected into the Levine tube returned promptly through the epigastric drain. Re-exploration was performed on the ninth postoperative day. Upon aspiration of a left subphrenic abscess, total gangrene of the gastric stump was recognized. The stomach was reduced to an extremely friable, paperlike, greenish-gray bag, with

a large perforation of the greater curvature. The anastomosis was still intact. Inflammatory changes below the transverse meso-colon were minimal. The necrotic stomach and the distal two inches of the esophagus were excised. Continuity of the gastrointestinal tract was re-established with a Roux-en-y esophago-jejunostomy.

Postoperatively, massive antibiotics, hydrocortisone, i.v. fluids, with plasma and blood replacement were administered. Intermittent intraperitoneal irrigation with Kanamycin was used.

During the sixth night following reoperation, sudden violent pain in the right flank developed, followed by shock. Peritoneal and generalized bleeding became apparent. The hemorrhages did not respond to multiple blood transfusions, vitamin K₁, Premarin, calcium, fibrinogen, and aminocaproic acid. The patient died six days later. Autopsy revealed generalized retroperitoneal, mesenteric, peritoneal, and pleural hemorrhages. Hemorrhagic infarction of the liver was found. The adrenals were atrophic and fragmented, the right one surrounded by a mass of clotted blood. The esophago-jejunal anastomosis was intact. There was no evidence of hemorrhage from the major vessels tied at time of gastrectomy.

Discussion

Barlow, Bentley and Walder, and later Brown and Derr, showed that the submucous plexus of the gastric wall furnishes blood to the entire stomach, when one of the main arteries, or even a single *vas brevium*, is injected. There are no end arteries in the stomach. Bernheim, in 1932, experimenting in dogs, procured gangrene of the central segment of the stomach, after ligation of all four main gastric arteries.

Kilgore *et al.*, also on dogs, obtained ischemic necrosis in 58 per cent of the gastric stumps after subtotal gastrectomy, with ligation of the right gastric, left gastric near the celiac axis, and splenic arteries proximal to the *vasa brevia*.

The left inferior phrenic artery usually originates from the aorta, and anastomoses with the left gastric artery in over 90 per cent of cases. However, anatomical studies of the blood supply of the proximal stomach show that the left gastric artery gives origin to the left inferior phrenic artery in 2.6 to 4.0 per cent of cases (Greig *et al.*, Adachi). It becomes obvious that when the left gastric artery is ligated near the celiac axis, and at the same time the splenic artery is interrupted proximal to the *vasa brevia* (with or without splenectomy), the blood supply of the gastric remnant relies on the left inferior phrenic artery alone (Figure 1). If, in these instances, the latter happens to originate from the left gastric artery, or if it is occluded by an arteriosclerotic process, or damaged during dissection of the lower esophagus during vagot-

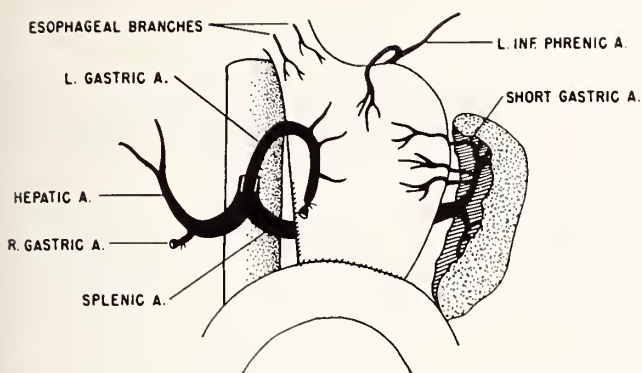


Figure 1. Blood supply of proximal gastric remnant following subtotal gastrectomy.

omy, ischemic necrosis of the gastric remnant may become inevitable.

Conclusions

(1) The surgeon should be aware of the relative limitations of the blood supply of the proximal stomach. In high subtotal gastrectomies, performed for non-malignant lesions, the spleen should be preserved and the left gastric artery preferably not be ligated close to the celiac axis. Vasa brevia, in open communication with a patent splenic artery, may become a precious pathway of blood supply to the stomach. The same reasoning applies to the important left inferior phrenic artery.

(2) The surgeon should make sure at operation that the blood supply of the proximal stomach is adequate. If not, he may have to commit himself to a total gastrectomy (Cutler and Zollinger).

(3) Any necrotic discharge appearing through the abdominal drain may be indicative of necrosis of the gastric remnant. In re-exploring the patient, the surgeon should make sure that an "anastomotic leakage" is not, in effect, due to such vascular necrosis. Any necrotic tissue is to be widely excised, and gastro-intestinal, or esophago-intestinal, continuity re-established without tension. The Roux-en-y type of anastomosis is a satisfactory procedure in these cases.

(4) In high, but relatively uncomplicated, ulcers of the lesser curvature, proved benign by frozen section, local excision of the ulcer, followed by vagotomy and pyloroplasty may be a safer procedure.

Acknowledgement

The authors wish to thank Dr. Sam Zelman for his assistance in the preparation of this paper.

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IF TRANSVERSE RIDGING of the thumbnails occurs without a history of injury and without other nails being involved, the patient probably has a nervous habit, reports Dr. W. L. Macaulay of Fargo, North Dakota. He has found that "washboard thumbnails" are due to a patient's compulsion to pick at or scratch the thumbnails, sometimes digging at the cuticle as well, with another finger of the same hand. He describes three patients, each of whom readily acknowledged the habit of scratching the thumbs with another finger. When this habit was controlled, the thumbnails grew out normally.—*Arch. Derm.*, April, pp. 421-423.

Ileostomy Problems

-The Patients' Viewpoint

**DOTTIE diZEREGA and FRED A. BUCKNER in collaboration with
ALFRED M. TOCKER, M.D., HENRY J. BIERMANN, M.D., and
LILIA RODRIGUEZ TOCKER, M.D., Wichita***

THE WICHITA COLOSTOMY AND ILEOSTOMY ASSOCIATION (WCIA), a charter member of the United Ostomy Association, was founded in 1957 with a membership of six to provide assistance and comfort to ostomy patients. Today its membership numbers over 85. Only persons with an ileostomy or colostomy qualify for membership. It is a lay organization and is not intended to practice medicine. The aims of the association, as expressed in its constitution, are (a) to be of assistance to persons having a colostomy or an ileostomy, (b) to facilitate the readjustment of persons with an ileostomy or colostomy and to promote an understanding of their problems by their families, and (c) to be of assistance to doctors and nurses in their care of the patients. Information is exchanged and disseminated in group discussions, in educational lectures by invited speakers, and through publications. Members are called upon by physicians to visit with and counsel the new patient, thus allaying the fears and apprehensions attendant upon the surgery.

In 1965 the WCIA, in furtherance of the aims of this association, sent a standard questionnaire to 250 ostomates. Those contacted were members of seven similiar colostomy and ileostomy clubs, and lived in 16 states. One hundred and seven ileostomates and 92 colostomates replied to the questionnaire. The survey concerned patients' viewpoints and solutions of the psychological, functional and physical problems attending their surgery.

This paper is a report on this statistical survey concerning problems of the ileostomy patients only.

Pre-Surgical Period

At the time of surgery the median age of the ileostomates was about 40. After the age of 50 the

The Colostomy and Ileostomy Association of Wichita, Kansas, conducted a questionnaire survey among members of organized ostomy groups in nine states. The questionnaire was divided into five general headings: general information, information regarding the pre-surgical, surgical and post-surgical periods, and present stomal care. One hundred and seven ileostomates and 92 colostomates replied. This paper reports the replies received from the ileostomy group.†

incidence of ileostomy surgery dropped off rapidly to less than one per cent after the age of 65 (*Table 1*). No attempt was made to separate the replies by sex. However, of all replies received 64.4 per cent were from women.

Ulcerative colitis was listed as the primary diag-

TABLE 1
AGE AT SURGERY

	Per Cent
1-20 years	7.7
21-35 years	39.2
36-50 years	40.0
51-65 years	12.2
Over 65 years	0.9

* Mr. Fred A. Buckner and Mrs. Dottie diZerega are officers of the Wichita Colostomy and Ileostomy Association which conducted this survey.

This project was supported by grants from the Leo McGuire Research Foundation of Wichita, Kansas (through contributions of the Xi Tau Chapter of the Beta Sigma Phi Sorority) and by the American Cancer Society.

† For reports on replies received from colostomy group see Baird *et al.*, Colostomy Problems—The Patients' Viewpoint, J. Kans. M. S. Vol. 68, 1:1-4 (Jan.) 1967.

nosis leading to ileostomy by over 89 per cent, with minor percentages naming amoebic dysentery, ileitis, multiple polyposis and carcinoma. Duration of illness preceeding surgery, as might be expected, was usually of long standing (*Table 2*). Sixty-five per cent were troubled with their disease for over five years—14

TABLE 2
TIME FROM ONSET OF ILLNESS
TO TIME OF SURGERY

	<i>Per Cent</i>
Less than 1 month	2
1-6 months	17
6-12 months	5
1-3 years	13
4-5 years	14
6-10 years	20
11-15 years	17
Over 15 years	14

per cent more than 15 years—before surgical procedures gave them relief. With such a long history of poor health behind them, it is quite understandable that 39 per cent indicated "relief" as their initial response when told that surgery was to be done (*Table 3*). This same reasoning also accounts for a similar 39 per cent giving immediate approval for the surgery, although 13 per cent delayed more than a year before consenting to have the surgery performed (*Table 4*).

While 59 per cent felt their doctor had fully explained their surgery to them prior to operation, an alarming 12 per cent stated that they were not informed, or did not understand, that the operation would "put their bowels on the outside" on their abdomen. Twenty-nine per cent felt the surgery had been only partially explained to them pre-operatively; 62 per cent felt they should have been told more. In view of recent precedents, such dereliction of dutifully informing the patient may see such surgery attended with forensic complications.

It is quite understandable that the general public has little or no knowledge of ostomy surgery. The survey showed that 49 per cent of the ileostomates entered the hospital without ever having heard about ostomy surgery before, and 26 per cent under-

TABLE 3
REACTION TO SURGERY

	<i>Per Cent</i>
Shock	19
Relief	39
Indifference	9
Fear and apprehension	27
Emergency (no time to think)	6

went surgery with no additional information other than that received from their doctor.

Post-Surgical Period

In those cases where private nurses attended the patient, hospital care was most satisfactory. But 38 per cent of the ileostomates expressed dissatisfaction with general floor nursing care—much of this dissatisfaction being attributed to a lack of training and understanding by the nurses in the care of ileostomates and in the proper usage of ileostomy appliances.* In a similar survey answered by 92 colostomates, only 13 per cent of the colostomates considered their hospital care inadequate. Thus three times as many ileostomates as colostomates felt that hospital nursing care was inadequate. Likewise, more ileostomates (48 per cent) than colostomates (32 per cent) went home from the hospital without full knowledge of self-care. Fifty-six per cent of the ileostomates

TABLE 4
TIME OF ACCEPTANCE OF SURGERY
(After Recommendation of Surgery by Physician)

	<i>Per Cent</i>
Immediately	39
Less than 1 week	19
1-4 weeks	13
1-3 months	9
4-12 months	7
Over 1 year	13

were visited in the hospital by fellow ostomates, and it was primarily due to these visits that 52 per cent left the hospital with satisfactory knowledge in this regard.

After surgery, ileostomy care was usually relegated to hospital and surgical supply house personnel who oftentimes were inadequate. As set out in *Table 5*, 35 per cent stated that their physician was their only source of information regarding their ileostomy, and 35 per cent secured additional information, other than that supplied by their physician, from books and pamphlets. The majority (53 per cent), however, received such additional information from other ileostomates, while a mere eight per cent acknowledged having received such information from the nursing profession, indicating the need of the nursing profession becoming better informed regarding ileostomy

* Currently Wichita hospitals regularly schedule seminars in all phases of ostomy care for student nurses, licensed practical nurses, and nursing groups. Teachings aids, demonstrations, and lecturers are furnished by the WCIA.

TABLE 5
SOURCE OF ILEOSTOMY INFORMATION
(Other Than Physician)

	Per Cent
None	35
Books and pamphlets	35
Ileostomates	53
Nurses	8

(NOTE: The percentages are over 100 per cent because many respondents gave more than one answer.)

care. Physicians also were derelict in this respect in many cases. Many of the ileostomates replied that they had to revamp, in some instances completely, habits and ideas taught in the hospital. Almost half were forced to rely on hit-and-miss procedures of ostomy management.

Local ostomy clubs were a source of assistance and encouragement to new ileostomates. These patients, many of them comparatively young, were often depressed and their morale, more often than not, was low, especially in the immediate postoperative period.

Ileostomy Appliances

It is generally accepted that a newly formed ileostomy should not leave the operating room without an adherent bag, be it permanent or temporary in type. The two-piece appliance is more popular because the bag used is oftentimes disposable and, since a new bag is reapplied, there is no retained odor. Also it is easier to center the ring around the stoma without having the ring press against the bud.

Ten per cent had their permanent appliance fitted in less than a week; 35 per cent between one and two weeks; 23 per cent between two and four weeks; and 32 per cent not for over one month.

Forty-two per cent of the ileostomy bags, whether of the one- or two-piece variety, were fitted by physicians; ileostomy club members, 18 per cent; nurses, 14 per cent; surgical supply company representatives, 9 per cent; and other persons, 17 per cent.

Sixty per cent of the permanent type of appliances worn are made of rubber or neoprene and 40 per cent are plastic. Many of those wearing the neoprene bags overcame clothing discoloration by sheathing the bags in cloth. One-piece appliances were used by 41 per cent, while 59 per cent used the two-piece variety. The survey indicated that once a type of appliance is selected for the patient he remains loyal to that type.

In the care of the appliances, it was reported that

of those wearing a one-piece type, 55 per cent changed it daily; 28 per cent every two to three days; 7 per cent every four to six days, and 10 per cent wore such appliances without change for over a week. Changes by those wearing two-piece appliances were reported as follows:

	Pouch PER CENT	Shield PER CENT
Daily	41	16
2-3 days	36	36
4-6 days	16	32
Over a week	7	16

The length of time needed for an appliance change ranged from five minutes to over one hour, but by far the majority took between ten and 30 minutes.

Complications

On the whole, ileostomy complications were by far more frequent and more serious than colostomy complications. The complications listed in Table 6 were reported by 49.9 per cent of the ileostomates responding to this questionnaire survey. Because of multiple problems listed by some, percentages total more than 100. Sixty-eight per cent were hospitalized because of the complications listed. This impressive list of complications and the high percentage of patients affected and hospitalized signifies that the creation of a ventral "anus" is no simple solution in itself. Interestingly, the incidence of complications followed a definite time pattern, first appearing within three months after surgery, then declining until a period of 12 months had elapsed, after which a second rise in the incidence of complications occurred. Unfortunately, the survey did not indicate which complications were more frequent at these periods of high incidence.

TABLE 6
ILEOSTOMY COMPLICATIONS

	Per Cent
Obstruction	32
Abscesses	19
Granulations	19
Hernia	7
Stenosis	7
Prolapse	8
Retraction	6
Adhesions	3
Other	4
None	16

Percentages given are percentages of all problems noted (many listed multiple problems).

Ninety per cent of the patients had a perineal resection performed in conjunction with colectomy. Forty-five per cent reported complete healing of the perineal wound in less than two months, but 15 per cent still experienced perineal drainage after more than three years. Apparently in such cases a temporary measure of relief occurs after treatment with antibiotics only to recur again.

Other Problems

Odor was a decided problem for 33 per cent and an occasional problem for 43 per cent. Only 31 per cent of all the patients' physicians prescribed diets, and among those for whom diets were prescribed, only 19 per cent were still following them. For most ileostomates, diet presented no problem at all, although all had to be watchful of certain foods if they wanted to minimize odors. Beans, onions, and the cabbage family were mainly avoided. Additionally, eating a few sprigs of parsley, spinach or lettuce, or swallowing tablets of chlorophyll or activated charcoal helped deodorize the ileal dejecta. Many countered odor-causing bacterial growth by placing chlorine tablets, or sodium benzoate tablets, or even aspirin tablets, in the pouch. The practice of using either neoprene or disposable bags is popular because they do not retain odor. Seventy-six per cent felt they had achieved satisfactory odor control.

Associated with the odor problem was the formation of "*gas*," dependent for the most part on diet, requiring avoidance of certain foods, as set out above. Fourteen per cent reported this to be a serious problem; 56 per cent an occasional problem, and 30 per cent no problem at all.

Except as stated above with reference to odor control, *diet* apparently presented no special problem. Sixty-nine per cent of those replying stated that their doctor did not prescribe a diet upon their discharge from the hospital, and of the 31 per cent for whom diets had been prescribed, only 19 per cent continued to follow them. Seventy-two per cent stated they had no trouble with different types of food and felt that diet was not a problem, or was a purely personal one not related to the ileostomy surgery. One question asked whether more salt or fluids were required after surgery than before, but the results were not conclusive. Twenty-four per cent reported that they required a greater intake of salt, some being very definite about the need for such an increased intake, but 76 per cent felt their salt intake had not been affected by the surgery. About half reported a greater fluid intake, while the remainder noted no difference.

Constipation was reported as "unheard of" by 94 per cent. *Diarrhea* was not a problem except in the usual and ordinary diarrhea-producing conditions or in the presence of certain infections, such as "flu."

Unless fluids are provided under such circumstances, the ileostomate may become rapidly dehydrated. One reported that when she had "flu," because of the dehydration problem (which had resulted in the loss of eight pounds of weight in a 12-hour period), she could not go to bed but had to sit up at night to keep replenishing her fluids. While many fluids may be used to replace the lost water, it has been found that the sodium and potassium losses can be replaced by drinking Pepsi Cola, Canada Dry ginger ale, and beef bouillon, among other drinks.

Twenty-four per cent stated they had *skin problems*; 50 per cent admitted occasional skin problems and 26 per cent had no skin problems whatsoever. However, even among those reporting skin problems, 97 per cent stated these were of a minor nature. Many different products were reported as being used to control skin problems, but by far the most commonly used was Karaya Gum Powder (used by 89 per cent of the ileostomates). Sixty-seven per cent of those replying to the questionnaire stated they used a protective powder, ointment or lotion regularly for skin care.

Stomal Length

Extremes in length of the ileac stump contributed not only to skin irritation but also to difficulties in the use of appliances. Too short a stoma made it difficult for an appliance to be "leakproof" and increased the chance of skin irritation secondary to intestinal discharge. Too long a stump interfered with the proper fixation of the appliance. The survey found that stomal lengths varied from skin level to over one and a half inches. One ileostomate reported a stoma over three inches in length. Fifteen per cent were not satisfied with the length of their stomas. The preferred stomal length, although somewhat indefinite, appeared to be about three-fourths inch.

Pregnancy

While the number involved in this survey were too few to serve as an adequate basis for any definite conclusions regarding pregnancy, it would appear that ileostomy surgery has little or no effect upon pregnancy or normal delivery. It is known that many women have had multiple births without complications. Cesarean sections have been performed when necessary without affecting the ileostomy at all.

Summary

A questionnaire survey by the WCIA answered by 107 ileostomates revealed that although it was felt that the surgeon capably performed the surgery *per se*, the patients were often ill-informed preoperatively regarding the type of surgery they were to

undergo, and postoperatively regarding the care and problems associated with ileostomy surgery.

The survey indicated the need of the nursing profession becoming better informed regarding ileostomy care, including a knowledge of ileostomy appliances. Many physicians were also derelict in this respect, especially postoperatively. Many of the ileostomates had to revise, in some instances completely, habits and ideas taught them in the hospital.

While both permanent and disposable appliances are worn, disposable units are favored. Neoprene and plastic bags and two-piece appliances which permit use of disposable bags are the more popular types of apparatus used.

Ileostomy complications were more frequent and severe than corresponding colostomy complications. There was a high incidence of complications within the first three months after surgery, and after a period of one year.

Problems were non-existent, not serious, or controlled in most cases. Odors and "gas" were controlled by diet and simple medications placed in usually disposable pouches. Diet was not a problem

except when control of odor and gas was indicated. Skin problems were avoided for the most part, or were treated primarily with Karaya Gum Powder as well as with skin ointments or lotions.

Pregnancy had no adverse effects on ileostomates.

Local ostomy clubs were a source of great technical assistance and psychological encouragement to the new ileostomates. The patient should understand that an ileostomy is an ileostomy—an inconvenience (at times) but not a catastrophe. A return to a very acceptable normal way of life is possible in almost all cases. The medical profession, doctors and nurses, should be aware of the existence of, and encourage the formation of, ostomy groups which can help the patient pre-operatively and certainly postoperatively, bridging the gap between release from hospital care and return to job and family. The Colostomy and Ileostomy Association extends help and friendliness, when requested, to all ileostomy patients who need it, helping with their common and rehabilitation problems, leaving the major medical problems to their physicians.

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Inhalation Anesthesia

Developmental Trends in Inhalation Anesthesia

HUGH S. MATHEWSON, M.D.,* *Kansas City, Missouri*

Introduction

Discovery of Anesthetic Gases and Vapors. General anesthesia produced by the inhalation of gases or the vapors of volatile liquids is a procedure scarcely a hundred years old. No reference to its employment appears in papyri, tablets, scrolls or ancient manuscripts. Nowhere in the tradition of medieval alchemy is mentioned the absorption of drugs via the inspired air. Variations in the volatility of liquids were recognized by the early chemists. The odors of spirits and essences were recorded, but continuous inhalation of a vapor for therapeutic purposes is conspicuously absent from these writings. Just why such an idea did not occur to Valerius Cordus, Paracelsus, or others familiar with ether is somewhat mysterious.

The realization that the inhalational route of administration could be used came only after gases themselves were demonstrated. The term *gas* was apparently coined by Van Helmont (1577-1644), who devised methods for their collection and identification. He seems to have been the first investigator to appreciate the existence of this state of matter. However, another hundred years elapsed before the more common gases were clearly identified. Carbon dioxide (Black, 1757), oxygen (Priestley, Scheele, 1774) and nitrous oxide (Priestley, 1775) were among the first to be discovered. Recognition of the life-sustaining properties of oxygen (Lavoisier, 1777) was soon followed by attempts to employ the gas therapeutically. It was even offered as a panacea (Beddoes, 1798).

The essential physiologic properties of gases were not elucidated for many years. This lag was doubtless due in part to the extreme toxicity of some of them, such as chlorine, cyanogen and carbon monoxide. Davy (1799) gave a vivid account of the stupefying effect of nitrous oxide when inhaled, and clearly suggested its practical application to the problems of pain control. A similar observation was made of ether vapor by Davy's distinguished pupil, Faraday (1818). Hickman (1824-6) reported a series of animal experiments using carbon dioxide to produce "suspended animation," but his findings were not

recognized, and his early death ended a promising line of development.

By 1840 the inebriating effect of ether vapor was well known. Early clinical trials by Clark (1841) and Long (1842) eventually culminated in the definitive demonstration of ether anesthesia by William T. G. Morton, October 16, 1846. The search for new inhalation agents began with this celebrated therapeutic

Only about a hundred volatile compounds have been discovered which qualify as inhalation anesthetic agents. Of these only a dozen or so have achieved wide clinical usefulness. The essentials of volatility and solubility, combined with biochemical inertness, are encountered in only a few molecular species. Also, stability in the presence of alkalis and nonflammability have become increasingly important requisites. At present, fluoro-hydrocarbons and fluoroethers, further substituted by heavier halogens, comprise virtually all new compounds of interest. Refined methods of chemical synthesis will doubtless bring more of these to experimental and clinical trials.

triumph. The impetus of this epochal event initiated a quest for other substances which might produce the same effect as ether, but more quickly, easily and safely. New volatile liquids were soon introduced, including chloroform (Simpson, 1848), ethyl chloride (Heyfelder, 1848), and amylene (Snow, 1856). Nitrous oxide was employed by Wells (1844), although its use did not become widespread for about 20 years (Andrews, 1868). Other agents, notably cyclopropane (Waters and Schmidt, 1933), have withstood the tests of clinical trial, but much of the recent history of inhalation anesthesia is confined to the post-World War II era, when fluorocarbons became available. Virtually all current interest is directed toward fluorinated derivatives, particularly fluoroethers, halothane and methoxyflurane.

Scarcity of Volatile Anesthesia Drugs. Pharmacologic studies have revealed only a small number of clin-

* Assistant Professor of Anesthesiology, KUMC, Attending Anesthesiologist, St. Luke's Hospital, Kansas City, Missouri.

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ically acceptable inhalation agents. The appearance of a new volatile drug of genuine worth is a comparative rarity. Of the hundred-odd compounds of which we have published reports, only a dozen or so have attained clinical stature. There are a number of reasons for this scarcity:

(1) The list of biologically inert *gases* is quite short. Low molecular weight hydrocarbons and a few of their halogenated derivatives comprise nearly all of the clinically useful members. Nitrous oxide, the noble gases, dimethyl ether, sulfur hexafluoride and nitrogen virtually complete the group.

(2) Biologically indifferent *volatile liquids*, while more numerous than gases, are still relatively few in number. All clinically useful agents thus far discovered are either halogenated hydrocarbons or ethers.

(3) The development of synthetic chemistry has only begun to encompass the possible combinations of electronegative elements. This is particularly true among the poly-halo-hydrocarbons, where direction of fluorine, chlorine or bromine into a specified position on a chain or ring may be easy or extremely difficult. The chemist makes what he can; the pharmacologist must select promising compounds from those which are available.

(4) Refinements in anesthetic apparatus have been necessary before certain volatile agents could be employed. Closed or semi-closed technics with carbon dioxide absorption, and sensitive vapor metering devices are essential to the administration of highly potent, expensive or inflammable compounds.

Requisite Properties of Inhalation Agents

Anesthetic Properties. In the clinical sense, general anesthesia may be defined as the physiologic state in which surgical stimuli produce no significant response by the patient. This involves a number of factors:

- (1) Loss of consciousness, or at least amnesia.
- (2) Sufficient analgesia to prevent response to painful stimuli.
- (3) Relaxation of skeletal muscle, to the extent that surgical progress is not impeded by movement or muscle guard.
- (4) Depression of autonomic functions, so that invasions of visceral tissues do not evoke serious reflex disturbances of vital functions.

Thus, anesthesia is a composite of different and separable physiologic components, each of which is influenced in its own peculiar fashion by each volatile agent. Most general anesthetic substances are effective only when total loss of consciousness is achieved. Obtundation of pain is an indispensable requisite. Analgesic requirements vary, of course, with the clinical situation. Muscle relaxation is now less essen-

tial than formerly. The supplemental use of short-acting paralyzant drugs (such as succinylcholine) has obviated the necessity for reduction of muscle tone by the inhalation agent. Similarly, autonomic depressant drugs, such as atropine, trimethaphan, or pronethalol may be used to control undesirable autonomic reflexes. Some of these adjunctive drugs have only recently become available. The requisite anesthetic properties of gaseous or volatile agents are thus subject to change, and properties once considered essential may now be more safely provided by supplemental drugs.

Potency. This is difficult to define accurately, but, in a way, corresponds to the dosage range for most drugs. By definition, the vaporization of a volatile agent at room temperature must be sufficient to provide concentrations which produce anesthesia. For an agent to be clinically applicable, the proportion of vapor must not exceed 80 per cent (pp about 600 mm Hg), the remainder constituting the oxygen requirement. While subatmospheric concentrations may be briefly tolerated, the continuous administration of a gas mixture containing less than 20 per cent oxygen is generally considered to be an unwarranted hazard. However, the partial pressure of an impotent agent may be augmented by increasing the total gas pressure; chambers have been constructed in which adequate anesthetic concentrations of nitrous oxide could be given without suboxygenation. Such apparatus is hardly practicable. Where an impotent agent shows other highly desirable characteristics, its feeble effects may be fortified with other central depressants, in the form of heavy premedication or supplementation.

At the opposite extreme, volatile agents of unusually high potency may be quite hazardous to administer unless the vapor is accurately metered. The evils attributed to chloroform have largely resulted from shortcomings in methods of administration. With the discovery of halothane it became evident that sensitive metering devices were essential to the safe management of anesthesia with these powerful drugs. Provided it can be properly administered, an agent which is effective in low concentration is highly desirable. Pulmonary irritant effects are minimized, ample proportions of oxygen can be maintained, and nitrous oxide can be added as a supplement.

Induction and Recovery Time. It is preferable that the agent reach the brain quickly, to minimize the period of induction, and that elimination be as rapidly achieved to shorten the period of recovery. Also, rapid change of concentration facilitates the adjustment of anesthetic depth.

Toxicity. Alteration of function within the central nervous system must be strictly reversible. Some stim-

ulatory neuromuscular disturbances may appear, particularly with the ethers, but these must be limited. Other organs must not be harmed. Of particular importance are the liver and kidney, where chemical changes occur with great facility, and the heart, whose optimal function is so essential to life. A further requirement, peculiar to agents administered by inhalation, is that broncho-pulmonary irritation be minimal.

External Requirements. Other properties of great importance do not relate directly to the organism, but to the requirements of the anesthetic apparatus and the operating room environment. A large proportion of inhalation anesthetics are now administered by a closed circle absorption method, in which carbon dioxide is removed by strongly alkaline hydroxides. This highly reactive medium decomposes many halogenated hydrocarbon anesthetic substances, usually with formation of toxic products. Therefore, to be used in closed systems, volatile agents must be stable in the presence of sodium, calcium and barium hydroxides.

A factor of increasing interest in clinical anesthesia is inflammability of volatile agents, particularly when administered with high concentrations of oxygen. The use of electro-cautery, x-ray, electrically driven surgical instruments, portable lighting devices, electronic monitoring equipment—the refinements of armamentarium which have so far advanced the practice of surgery—have multiplied the sources of ignition. Inhalation agents which contain hydrocarbon groupings are usually inflammable, a shortcoming which excludes them from an increasing number of surgical procedures. A compelling reason for the recent interest in fluorocarbons has stemmed from a desire to eliminate the hazards of anesthetic fires and explosions.

Another essential property is chemical stability to prolonged storage, under reasonable variations in temperature and moderate exposure to light. Chemicals may be added to retard oxidation or prevent polymerization, but not in sufficient quantities to produce physiologic effects. Portability and cheapness are other desirable characteristics worthy of mention.

Physicochemical Properties of Inhalation Agents

Chemical Inertness. All volatile agents of clinical value are essentially non-reactive *in vivo*. To be more explicit, their activity does not appreciably involve the disruption of covalent chemical bonds, the usual criterion of decomposition. Gradations of reactivity fall within a narrow range, between the almost total inertness of xenon, and the measurable metabolism

of trichloroethylene.³ Compounds which are nearly insoluble in water are absorbed and eliminated practically quantitatively by the lungs. Thus, by suitably altering the concentration and ventilatory rate, one can add or withdraw these compounds from the circulation at will.

Biological inertness is of particular importance among these compounds of simple molecular structure. It is probable that the hepatotoxicity of many halogenated hydrocarbons is related to their decomposition in the liver, with formation of highly destructive products. Even moderately reactive compounds, such as carbon dioxide and carbon disulfide, are quite toxic in anesthetic concentrations. Highly reactive gases, such as carbon monoxide, hydrocyanic acid, arsine, chlorine, and phosgene are among the most rapidly lethal substances known.

Chemical stability in the presence of alkalis and non-flammability are other important criteria of non-reactivity which are mentioned in the preceding section.

Volatility. Since inhalation agents are chemically indifferent, their effects are largely subject to their individual physical properties, many of which are readily measurable. Thus, by comparison of vapor pressure curves the experienced observer may arrive at a fairly accurate estimate of the behavior of gases and vapors *in vivo*, particularly among structurally related groups.

Volatility is generally decreased as molecular weight increases. This is particularly well demonstrated by the halogenated hydrocarbons, where the substitution of hydrogen (At. Wt. 1) by fluorine (At. Wt. 19), chlorine (At. Wt. 35.5), bromine (At. Wt. 80) or iodine (At. Wt. 126) increases the boiling point of each compound according to the number and atomic weights of the halogen atoms present. Exceptions can be cited in abundance, but this is a guiding principle.

Anesthetic potency is increased as the volatility decreases. A principle first clearly stated by Ferguson¹ is that the ratio of the anesthetic partial pressure (Pa) to the saturated vapor pressure of that substance at the same temperature (Ps) is very roughly constant:

$$\frac{Pa}{Ps} = K \quad (0.03-0.8)$$

Thus, if the vapor pressure of a volatile substance is low at room temperature, the required anesthetic concentration also will be low. Therefore, compounds with high boiling points tend to be more potent than similar compounds with lower boiling points, since their saturated vapor pressures are lower, and their anesthetic partial pressures are correspondingly reduced. This readily explains why gases of extremely high volatility, such as hydrogen and helium, are not

anesthetic; nitrogen, methane and argon very weakly so, and nitrous oxide and xenon more definitely so. On the other hand, the vapors of higher boiling halogenated hydrocarbons (chloroform, B P 61°C., halothane, B P 50.2°) and ethers (methoxyflurane, B P 104°C.) are extremely potent.

Gases are less potent than liquids of similar composition, and the less volatile the liquid the more potent its vapor is likely to be. Eventually a limiting state is reached where a liquid may be so non-volatile that a sufficient quantity of vapor is not evolved at room temperature to produce anesthesia. A case in point is bromoform (B P 150°C.), a highly depressant drug, but one which cannot be administered by inhalation. However, as the limit of volatility is approached a factor of safety is introduced, namely, limitation of dosage. Although trichloroethylene (B P 87°) and methoxyflurane (B P 104°) are both highly potent, vaporization at room temperature is so limited that toxic concentrations of vapor are difficult to produce. These agents are relatively safe to employ, although satisfactory levels of anesthesia may not be easy to obtain, and induction and recovery may be prolonged.

Solubility. Volatile anesthetic agents exert their dominant effects on nervous tissue, a substance rich in proteides and lipoids. In order to gain access to this tissue the agent must be conducted through the circulating blood, the fluid component of which is mostly water. It is therefore essential that some of the volatile compound escape solution in the plasma in order to reach the nervous tissue in significant concentration. Thus, preferential solubility in organic substances and relative insolubility in aqueous substances favors anesthetic activity.

In general, substances dissolve in water if they can form hydrogen bonds with water. These include alcohols, aldehydes, ketones, acids, esters and amines. None of these classes contribute volatile compounds of anesthetic value. Non-hydrogen bonding compounds do not dissolve in water. These include hydrocarbons and their halogenated derivatives. Since these compounds are freely soluble in non-aqueous solvents like themselves, it is not surprising that they are absorbed readily into nervous tissue. Such substances would be rapidly transported by the plasma, and yielded in high proportion to the brain. One therefore expects that a volatile anesthetic hydrocarbon or halo-hydrocarbon would exert its effect rapidly on inhalation, and that its effect would be quickly dissipated when the agent is removed, particularly if its vapor pressure is high.

Ethers occupy an intermediate position between the two groups just described. Some hydrogen bonding can occur, particularly among ethers of low mo-

lecular weight. If aqueous solubility is appreciable, as in the case with diethyl ether, a large reservoir of agent is taken up by the plasma. This retards both neuronal saturation and desaturation. Induction and recovery are therefore slow, and variations in anesthetic level cannot be rapidly accomplished.

Uptake and Distribution.² Accurate determinations of the solubilities of volatile agents in the body fluids and tissues have enabled researchers to clarify the mechanisms of transport, and to construct formulas relating physical properties of the agents to their uptake and distribution. To reach the brain the drug must be inhaled, absorbed at the alveoli of the lungs, and carried by the arterial blood to the central nervous system. Concentrations of agent in the brain are thus influenced by the concentrations in the inspired mixture, in the alveoli, and in the blood supplying the brain. Since one phase of this system is gaseous, it is convenient to express concentrations of agent in terms of partial pressures. The first premise, therefore, is that depth of anesthesia is proportional to the partial pressure (vapor tension) of agent in the brain.

To reach the brain, a volatile agent must traverse two interfaces, the pulmonary alveolus and the neuronal cell membrane, each with its own partition coefficient. The inspired partial pressure is, of course, the fraction of the total ambient pressure (1 atmosphere or 760 mm Hg) exerted by the anesthetic gas or vapor. Transfer of the agent to the alveoli is dependent upon pulmonary ventilation. The alveolar tension is *less* than the inspired tension on induction because of dilution by other gases (nitrogen, carbon dioxide, water vapor, etc.), and *greater* on emergence, where the gradient is reversed and the inspired tension is zero.

The alveolar membrane is freely permeable to the agent, and tensions become equalized between the alveolar gas and the arterial blood; the more soluble the agent is in blood the more must be dissolved to raise the arterial tension. Therefore the blood:gas partition coefficient (λ), i.e. the ratio of blood to gas concentrations when their partial pressures are equal, is of great importance in determining the rate of uptake of agent. Ether, which is highly soluble in blood ($\lambda=12$), must be supplied in large quantities from the alveoli in order to raise the arterial tension to equilibrium, since so much of it is "lost" in solution. By contrast, cyclopropane ($\lambda=0.47$), which is much less soluble, rapidly attains an arterial tension equal to the alveolar tension, facilitating rapid transfer to the brain.

A similar partition occurs at the blood-brain interface, where a different solubility ratio exists, usually expressed as tissue concentration:blood concentration

at equal tensions. With a few exceptions, notably halothane, these coefficients are similar for all agents.

The rate of induction and recovery is largely predicated, therefore, on the following factors:

(1) The inspired tension of the agent. Induction is customarily accelerated by raising this above levels required for maintenance of anesthesia.

(2) The pulmonary ventilation, which influences the rate of change of alveolar tension.

(3) Alveolar-blood transfer. The lower the blood: gas partition coefficient, the more rapidly arterial tensions are raised to the alveolar level, and the faster the agent is conducted to the brain. Thus, the most rapidly acting volatile anesthetics are those with the *lowest* partition coefficients.

(4) Blood-brain transfer, which depends on the relative solubilities of the agent in the two media. This is usually expressed as the tissue:blood partition coefficient.

Types of Compounds With Requisite Anesthetic Properties

Hydrocarbons. Homologous series of hydrocarbons were investigated comparatively early in the history of anesthesia. Nearly all saturated and unsaturated compounds of low molecular weight were screened experimentally, and three (ethylene, acetylene and cyclopropane) have been widely used in man. Many hydrocarbons were rejected because of reported cardiac hyperirritability, a conclusion which may have been unwarranted in some instances. This could have resulted from (1) a paucity of experiments with the agent, (2) chemical impurities, particularly among unsaturated compounds, (3) use of animals, such as the dog, with hypersensitive conduction mechanisms, and (4) maladministration, with uneven absorption, hypoxia or hypercarbia. In retrospect, it would seem that the lighter olefins never really received proper study. This should not be considered especially unfortunate; probably none of them could be considered superior to cyclopropane.

Ethylene has disappeared from the armamentarium as acetylene did—for the same reason, inflammability. We may expect that inflammable agents will eventually be interdicted entirely, a final solution to a major operating room problem. Such a prohibition would deprive us of a useful anesthetic gas—cyclopropane. Although quenching agents, such as helium, may be added to minimize ignition risk, a certain residual hazard is still present. We can never feel safe, at least medico-legally, to use cyclopropane in the presence of cautery. For a time, however, it seems probable that it will continue to be widely used where the risks of explosion are minimal.

Halogenated Hydrocarbons. Successive substitution of heavy halogens into a hydrocarbon usually increases

potency if the compound retains stability. Anesthetic properties are not noticeably enhanced as fluorine atoms are added, but chloro- and bromo-hydrocarbons become considerably more depressant with the addition of each heavy atom. A bromine atom may contribute more than 50 per cent to the total molecular weight. Stable iodine compounds are difficult to prepare, and the limit of volatility is rapidly reached on successive substitution.

Lack of stability has disqualified many alkyl halides as potentially useful anesthetic agents. For example, ethyl chloride is stable, but di- tri- and tetrachloroethanes are increasingly toxic due to inability of the chlorine atoms to remain fixed to the molecule. Break-down products of halogenated compounds are highly poisonous, and may account for the liver damage reported following their use.³

Development of fluorocarbons has provided the researcher with a new group of volatile substances, the structural variations of which are diverse and multiple. Although per-fluorocarbons tend to be inert anesthetically, their stability is unsurpassed. Artusio⁵ has pointed out that halogenated derivatives must contain some hydrogen to have useful anesthetic properties. Perhalogenated compounds are either inert or convulsant. Fluorohydrocarbons are usually more stable than their purely hydrocarbon analogues, and further halogenation can often be accomplished with less tendency to decomposition. Particularly, a perfluorinated group, such as CF_3 , tends to confer a stabilizing influence on an adjacent halogenated group. For example, $\text{CH}_3\text{CH}_2\text{I}$ and CH_3CHClBr are unstable alkyl halides. Their corresponding trifluoro- derivatives, $\text{CF}_3\text{CH}_2\text{I}$ (trifluoroethyliodide)⁴ and CF_3CHClBr (halothane) are quite stable enough to withstand prolonged storage and exposure to soda lime.

Finally, halogenation of hydrocarbons reduces their combustibility. Where halogen atoms confer a major proportion of the molecular weight, the compound is usually non-inflammable.

Ethers. From a physico-chemical standpoint ethers are closely related to their corresponding hydrocarbons, and may be considered as aliphatic chains with a $-\text{CH}_2-$ replaced by $-\text{O}-$. These two constituents are nearly equal in molecular weight and form nearly the same bond angles. Physical data indicate that ethers are elongated molecules and have essentially the spatial character of their hydrocarbon counterparts.

Presence of the oxygen atom does, however, increase the polarizability of the molecule, with a consequent increase in water solubility. Many of the distinctive pharmacologic properties of ethers can be traced to their greater affinity to the aqueous body fluids, and a markedly different blood-brain distribution pattern is often the result. Compounds like diethyl ether and methoxyflurane are characteristically

slow-acting and tenacious in their effects, reflecting the large reservoir of agent held in solution in the circulation. Perhaps the pungency of diethyl ether relates to its solubility in the tracheo-bronchial mucosa, and this stimulatory action may account in part for its sympathomimetic character. As a rule, highly water-soluble gases have a "sharp" odor, indicating a more intimate contact with the pulmonary epithelium.

Diethyl and divinyl ethers and fluroxene are flammable, methoxyflurane is not.

Inorganic Gases. It is unfortunate that nitrous oxide is not a little more potent. If it were even the equal of ethylene, many of the problems of anesthesia could have been solved a hundred years ago. Much of the history of narcosis has been concerned with various means of circumventing the impotence of nitrous oxide, either by use of subatmospheric concentrations of oxygen, or by supplementation with more potent drugs. Where this could be accomplished by judicious experimenters the results have usually been quite satisfactory.

Perhaps the greatest flexibility and adaptability is achieved by techniques in which nitrous oxide anesthesia is continuously supplemented by another volatile agent. Diethyl ether and trichloroethylene have come to be used more often as nitrous oxide fortifiers than as independent agents. Indeed, the properties of halothane and methoxyflurane anesthesia are inseparably linked to the effects of nitrous oxide. The latter two drugs have the distinct advantage of providing a noninflammable mixture.

Of the remaining inorganic gases, only xenon possesses anesthetic value. Its properties are similar to those of nitrous oxide. Since our only source of this element is the atmosphere, in which it is present in only one part per 12.5 million by volume, the costs of extraction are prohibitively high.

Prospects

One may inquire at the outset of the discussion whether a search for new agents is a reasonable pursuit. If an old thesis is accepted—that a substance which depresses neuronal cells will depress all other cells—the pulmonary, cardiovascular, neuromuscular, hepatic and renal side actions will always be with us. This fact is certain: all agents with marked anesthetic potency are capable of exerting profound effects on other organs and tissues. Perhaps the ideal inhalation agent is as difficult of realization as the non-addicting narcotic. We are, however, in need of agents which provide increased safety and increased versatility. It would, for example, be most helpful to have a potent, noninflammable, volatile substance which is less depressant to vascular tone (and to the pregnant uterus) than is halothane.

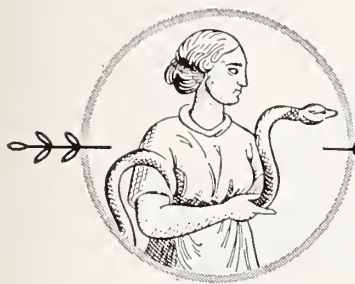
As the techniques of anesthesia become more refined there is an increasing tendency to equate the effects of equipotent doses of various agents. Nitrous oxide, once thought to be virtually without effect on blood pressure, is now shown to have the same hypotensive effect as other agents at profound levels. It would thus be logical to assume that hyperbaric nitrous oxide anesthesia might be as productive of side actions as anesthesia with a potent halogenated hydrocarbon at atmospheric pressure. Advocates of chloroform,^{6, 10} trichloroethylene,^{7, 11} halothane^{8, 12} and methoxyflurane^{9, 13} attest to their vanishingly small incidence of cardiovascular and visceral toxicity where these agents are judiciously used.

Flammability will continue to weigh increasingly against cyclopropane, ethyl chloride, diethyl and divinyl ethers, and fluroxene.

Newer agents will continue to be drawn from the halo-hydrocarbons. Since stability is so essential, fluorinated derivatives will be exhaustively explored. Potency will be favored by the use of heavier halogens; iodinated derivatives would be promising if sufficiently volatile and stable. With every confidence in the continued improvement in metering and monitoring devices, it is hoped that highly potent volatile substances which are stable over alkalis, nonflammable, biochemically inert and flexible to administer, will continue to appear.

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Medical HISTORY

An Account of the University of Kansas School of Medicine

RALPH H. MAJOR, M.D., Kansas City, Kansas

(Continued from January)

A student asked why this was called the Hixon Laboratory when the P.W.A. built it. There are grounds for his confusion. A tablet inside the door reads, "Federal Emergency Administrator of Public Works, Franklin D. Roosevelt, President of the United States, Harold L. Ickes, Administrator of Public Works, Hixon Laboratory Erected 1938-39." Three-fifths of the building was completed in 1935-36. The total cost was approximately \$180,000; the contribution of the P.W.A. was \$60,000. It would seem desirable to give some credit to those who gave their *own* money to this project.

The first building on the new site, designated on the architect's plans as the Administration Building and now known as the A Building, was officially called the Bell Memorial Hospital. This name is engraved in stone over the entrance and was retained partly because of its old association with the Medical School and partly as a tribute to the generosity of its founder, Dr. Bell, whose original gift established the Medical School and Hospital. Later, when the new buildings were added, it was deemed advisable to call the entire plant the University of Kansas Hospitals, this name appearing first in the catalogue of 1936-37. With the growth of the institution (*Figure 47*) and the development of other departments with instruction in physical therapy, occupational therapy, dietetics, speech and hearing, laboratory technique, and the stress laid on postgraduate instruction, it seemed proper to employ the designation popular elsewhere, so, in 1947, the name, "University of

Kansas Medical Center" was officially adopted. However, the official catalogue for 1953-54 speaks of "The Bell Memorial Hospital—University of Kansas Medical Center" and adds on page 27, "The Bell Memorial Hospital name still applies to the first building on the present site, which is now but a part of the entire plant."

The Hospital and Medical School were now generally known in Greater Kansas City. In the old days, whenever we mentioned the Bell Memorial Hospital to a friend or a patient, it was usually necessary to launch out into a long explanatory dissertation, often concluding with a pencil sketch or diagram. Now, almost overnight, everyone seemed to know where it was. A good appearance, as every salesman knows, has a profound effect on the public at large. On the old site the Medical School scarcely deserved mention; on the new site, with the same faculty, it attracted considerable attention.

It is a trite, but true, saying that men and not bricks are the true measure of a university. As the Medical School grew in popular esteem with its buildings, it grew, I think, in professional esteem through the scientific work done at the institution and through the good reputation its graduates gained.

Russell Haden, who laid the foundations of his scientific career at Kansas, soon became a national and an international figure through his work on focal infection, hematology, and intestinal obstruction. When he left Kansas in 1930 to become chief of the medical service at the Cleveland Clinic, there was widespread and genuine regret at his departure as he had a great capacity for friendship. Dr. Haden returned to Kansas City from time to time to visit and to lecture. In 1940, he accepted the invitation to deliver the Porter Lec-

This is the tenth of approximately twelve installments of Dr. Major's account of the early days of the University of Kansas School of Medicine.



Figure 47. University of Kansas Hospitals, 1944

tures. He always spoke to large and appreciative audiences, drawn by the excellence of his addresses and by their deep affection for the speaker.

Dr. Haden's death in 1952 was a great shock to his many friends, and none were so saddened as his old friends in Kansas City, where, as he was wont to say, he passed the happiest years of his life. A group of interested alumni, headed by Dr. Cecil Leitch, his devoted disciple, were instrumental in bringing to the Library of Medical History his unique collection of books on the history of microscopy and of hematology, the generous gift of Mrs. Haden.

Earl Padgett, who had transferred from Kansas at the end of his sophomore year of medicine to Washington University, where he graduated in 1918, returned to Kansas City in 1926, and became a member of the staff (Figure 48). His achievements in plastic surgery and his eminence in that field are a matter of common knowledge. His two books on plastic sur-

gery are recognized masterpieces in that field, and the dermatome (Figure 49) he devised, with Professor Hood, is used in practically every surgical clinic in the world.

Clarence B. Francisco, chief of orthopedic surgery (Figure 50), a man of great achievement in his specialty, was beloved by thousands of afflicted patients and by the students who sat at his feet. He traveled widely over the State of Kansas, holding orthopedic clinics, diagnosing patients, outlining treatment, and assisting the doctors who had not enjoyed his wide experience in this field. After his death, this work was carried out by his former assistant, Dr. James Weaver.

Frank Teachenor was the pioneer neurosurgeon of the Middle West. He was later president of the Cushing Society, achieved a wide reputation, and served his Alma Mater with distinction and singular devotion until his death in 1953. He was a quiet,



Figure 48. Dr. Earl Padgett

considerate and kindly man, whose modesty and innate integrity were equalled only by his uncanny diagnostic and operative skill.

Morris Ginsberg was a generous benefactor to the Medical School through the years, having established the A. Morris Ginsberg Student Loan Fund and the A. Morris Ginsberg Prize in Medicine. A much greater gift than these was the gift of himself and of his time to the Medical School. His association with the Medical School began the year he opened his office. For years he taught medical students the rudiments of physical diagnosis, held clinics and was not only will-

ing but eager to give his time to any project which would advance the standing of the Medical School and improve the quality of its instruction. He had a depth of perspective, which made him a wise and valued counselor.

Dr. Ginsberg also made notable contributions to medical literature. As Dr. Dimond has written:

One paper published in the *Archives of Internal Medicine* almost 20 years ago (55:42, 1935) is still a standard reference. In that paper, Dr. Ginsberg reported his experiences, while working with Dr. Stoland, in using 50 per cent glucose by vein with a resulting significant sustained increase in coronary flow. Other fundamental studies carried out over a period of 17 years resulted in 31 contributions to scientific publications.

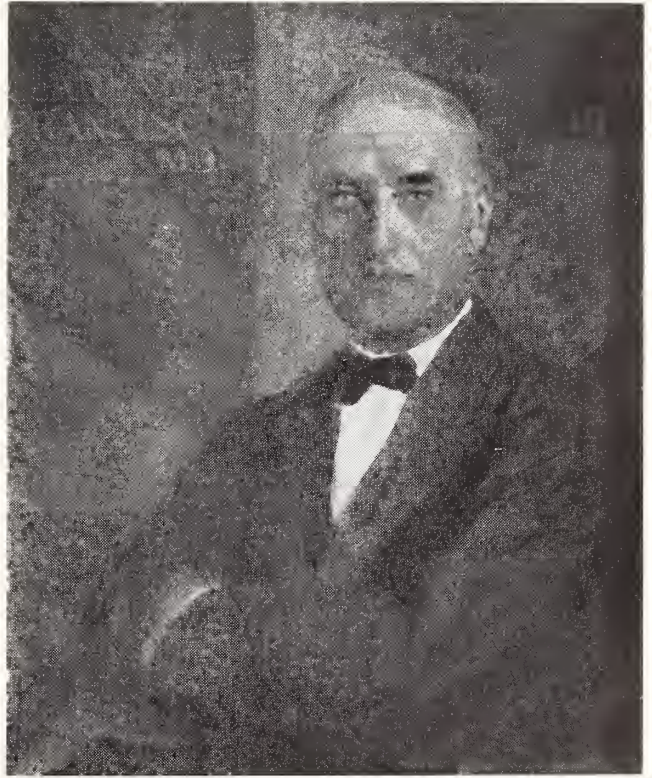


Figure 50. Dr. Clarence B. Francisco

Edward T. Gibson and Lewis G. Allen, who have been previously mentioned, were leaders in their fields and important members of the group who brought distinction to their Alma Mater.

In 1937, the so-called *corridor* was built between the B Building and the Clinic Building. The term, "so-called," is used advisedly since it proved to be an unfortunate designation as well as an inadequate term, for it was more than a mere corridor—it housed the x-ray department on the second floor, the store-room and postmortem room of the department of pathology on the first floor. When the building request involving \$100,000 for the construction of a corridor was made, there were outcries against the

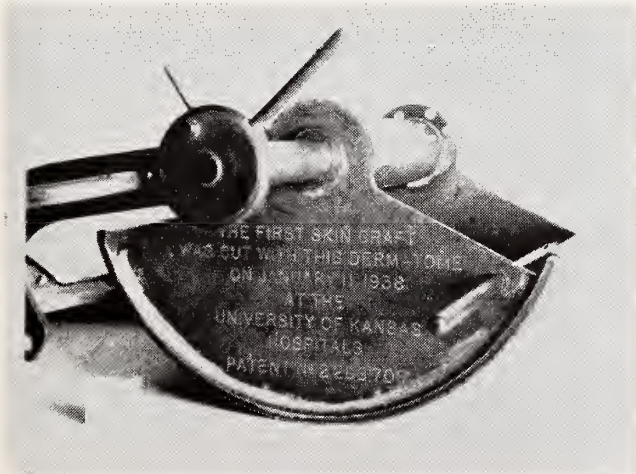


Figure 49. Padgett-Hood Dermatome

extravagance of spending so much money for a corridor. However, when the matter was thoroughly explained, the appropriation was approved without too great opposition.

The corridor provided a new and attractive home for the x-ray department, which had been languishing for many years in a room in the basement of the A Building. When the Administration Building had been constructed, it had been confidently expected that the x-ray department would soon be housed in a new building. We waited 16 years, during which time Galen Tice had taken charge and the department had grown enormously in volume of work and impressively in skill and efficiency.

In 1938, an event took place which did not attract too much attention at the time but which became increasingly important later, particularly in the department of surgery—the appointment of Dr. Paul Lorhan as instructor in anesthesiology. Since then, Dr. Lorhan has built up a department of anesthesiology which is nationally known and held in esteem. A residency in anesthesiology here is a much sought position. No branch of the healing art has in the past generation shown more striking advances than anesthesiology. From the English “chloroformist” to the modern anesthesiologist, sitting before a complicated network of valves and gauges and watching simultaneously the patient’s pulse chart, respiratory chart, blood pressure chart, and electrocardiogram, is a transition almost like that from medieval times to the 20th century. In a great many of these advances, Paul Lorhan has played a conspicuous role. Meanwhile, his department has provided excellent instruction in this field.

One morning in the spring of 1939, Chancellor Lindley requested the Dean of the Medical School and several members of the faculty to meet him in the Chancellor’s office at Lawrence. When we arrived, he received us with his usual charming courtesy and asked us to be seated. As soon as we had taken our seats, he walked to his desk, picked up a typewritten sheet of paper addressed to the Board of Regents, and read his resignation as chancellor. When he had finished reading, he added that he had always been tremendously interested in the Medical School, its remarkable development during the past few years he regarded as one of his main achievements as Chancellor of the University, and that he had such affection and friendship for its faculty that he wished its members to be among the first to hear his resignation.

We were deeply touched by the Chancellor’s words but, also, profoundly shocked—such an announcement was the last thing we had expected when we assembled in his office. There had been, so far as we knew, no rumors of an approaching resignation, no hints or suggestions from the Chancellor himself.

After we had all expressed our regrets, the Chancellor went on to say that he had planned this course for a long time and that he was now on the point of realizing the dream of a lifetime—a trip to the Orient and, after his return, he hoped to give some courses in philosophy. “You may never have suspected it,” he said with a twinkle in his eye, “but I am a philosopher. All of my professional training has been in psychology and philosophy.” Probably this training enabled him to suffer with calm and equanimity the many insults he had received during that hectic period which was capped by his ignominious dismissal. One of the crowning achievements of his career as Chancellor was his final success in ridding the University of a brazen variety of politics, which had gradually crept in during the heyday of the Board of Administration.

Chancellor Lindley never returned from the Orient. While in China, he became seriously ill; a malignancy of the lungs was diagnosed; he took passage homeward on a Japanese steamship, but died at sea. Mrs. Lindley confided to me, shortly after her return, that almost the first day she arrived home she told a group of people of his last illness, how kind the Japanese doctors, nurses, maids, cabin boys on the vessel were, how the captain stopped the steamer in mid-ocean for the burial services and had expressed his sympathy and concern every day of the return trip. Suddenly, she said that she noticed how frozen all conversation became, how some of the people almost glared at her, then she thought suddenly to herself, “Oh, I forgot. We are supposed to hate the Japanese.” After that, she never discussed the Japanese.

Deane Malott, who succeeded Dr. Lindley as Chancellor, was a former student of his, having graduated from the University of Kansas in 1921. To those of us who had worked so long with Chancellor Lindley and had looked up to him as to an elder statesman, Malott seemed a most youthful Chancellor (*Figure 51*). However, he soon showed a very clear grasp of our problems at the Medical School and a deep and genuine interest in its future. He was an excellent administrator, a master speaker, whether making a prepared address or speaking extemporaneously, a clear thinker, a courteous, charming and tactful gentleman. Whenever we came from a conference with the Chancellor, we always knew where he stood. He was as eager as we to make the University of Kansas School of Medicine a great school, and we never had any conflicts, or even any long-lasting serious divergencies of opinion.

Meanwhile, the world situation slowly worsened in spite of optimistic predictions—particularly from travel agencies. In 1939, Hitler, after securing his rear by a benevolent treaty with Stalin, plunged the world into war. During the first two years, the war

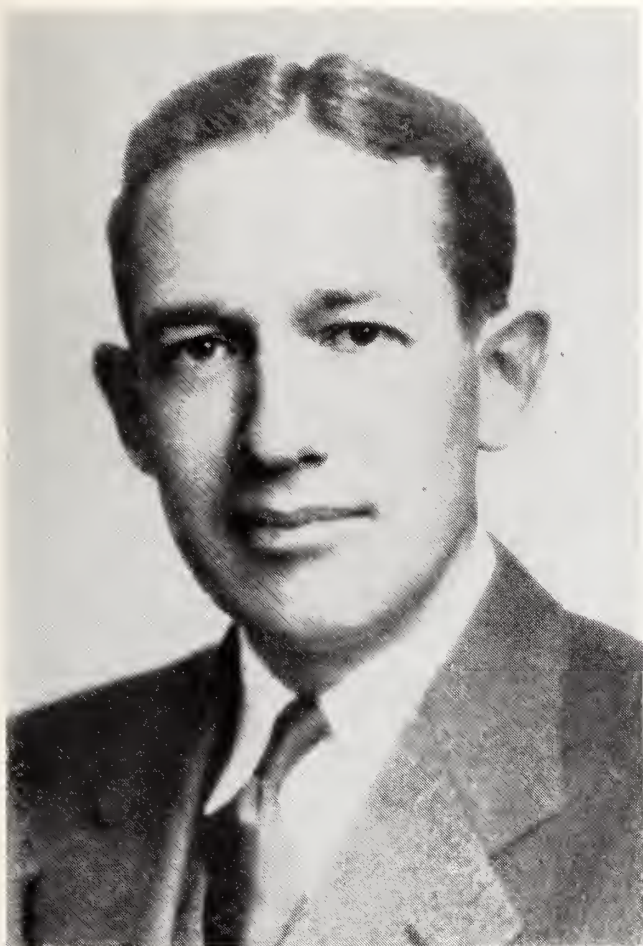


Figure 51. Chancellor Deane Malott

went badly for the Allies, with France overrun and England with her back to the wall. Many of us, with memories of the First World War still fresh, saw ominous signs which reminded us of the first time we were gently eased into a war.

So, we were not so surprised. In the summer of

1940, following a request from the Surgeon-General, an evacuation hospital unit was formed. With Pearl Harbor on December 7, 1941, this paper organization became a living, throbbing thing under the command of Dr. Hashinger, and recruits literally began to pour in, both officers and men. In addition to members of the hospital staff, a number of physicians and dentists practicing in Kansas City, as well as alumni of the Medical School, joined. On May 22, 1942, a farewell banquet and party were given in honor of the 77th Evacuation Hospital (Figure 52), and the following day 35 officers reported at Ft. Leonard Wood. We were all proud of them as our representatives on the field of battle and quite expected the magnificent account they gave of themselves (Figure 53). But we will leave them at this point. A fascinating account of their adventures has been written by one of their number, Dr. Max Allen, in *Medicine Under Canvas*, Kansas City, Sosland Press, 1949.

During these years, we had an increasing number of visitors from other educational institutions and foundations. One such visitor from the Rockefeller Foundation took me aside and said very gravely, "The fundamental defect of your organization is that you have placed unbearable burden on the shoulders of one man—Dr. Wahl. He is dean, professor of pathology, and superintendent of the hospital, each one of them a full-time job." I explained to the visitor that the thought was not entirely original with him, for many of us had protested to Wahl because of the enormous amount of work he was doing. We told him frankly that he was not exactly in physical strength an Atlas capable of carrying the weight of our world on his shoulders and that, while he did not seem to bend under the weight, he did creak a little at times. Finally, the dripping water did wear a groove on

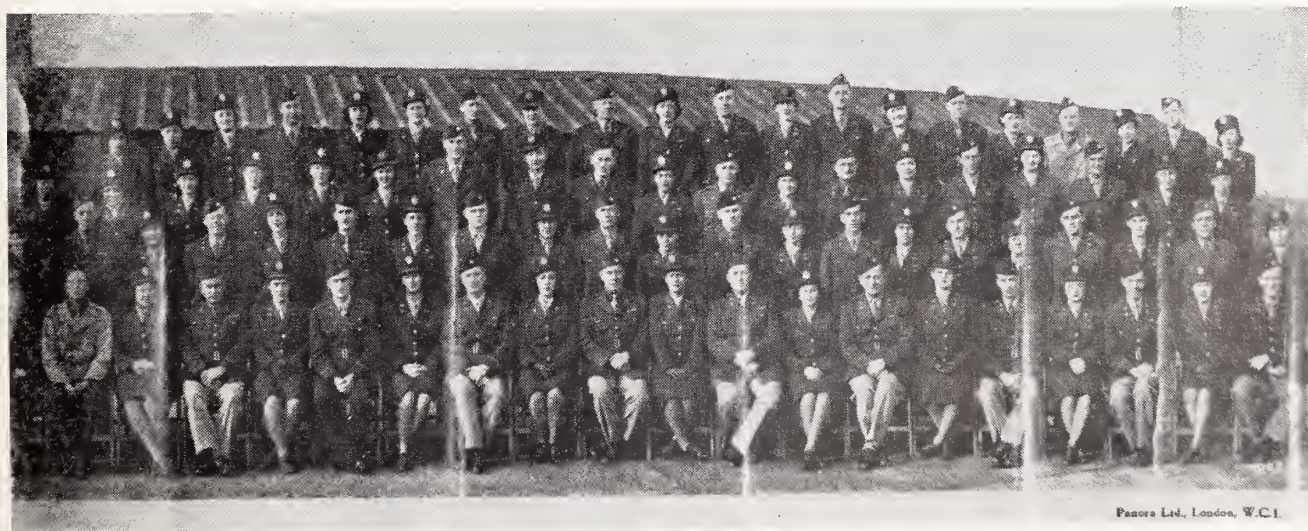


Figure 52. 77th Evacuation Hospital Unit



Figure 53. 77th Evacuation Hospital medical staff, LaMaskinia, Tunisia, March, 1943. (1) Lt. Col. Mahlon Delp; (2) Capt. James Fisher; (3) Capt. Tom Hamilton; (4) Capt. Gordon Vorhees; (5) Maj. Maurice Snyder; (6) Capt. Normal Gale; (7) Capt. Max Allen.

the stone, and Dr. Wahl appointed a superintendent of the hospital—Dr. Harvey Jennett.

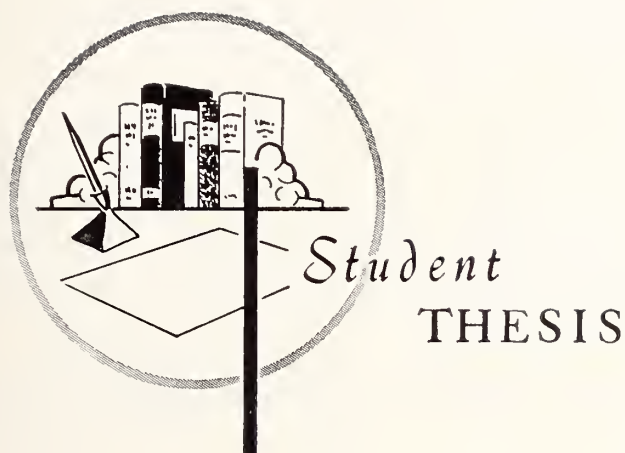
Dr. Jennett, who had had previous experience, was an excellent choice and served most creditably for two years, when he resigned because of the pressure of private practice. He was succeeded by Mr. Charles Newell, who was a great favorite, but whose activity was seriously hampered by ill health. His death in 1951 was universally regarded as a great loss to the institution.

During the War, there was some disorganization due to a marked reduction in the number of the faculty and to drastic curtailments in the number of residents permitted. In addition, there was a speedup in the medical curriculum, the students attending classes the year round although the number of instructors was reduced. However, all these adaptations to changing conditions were made with a minimum of friction. Dr. Orr, chief of the surgical department, kept that department in good running order and at a high level of operative and teaching efficiency. In the department of medicine, Drs. Don Peete, Graham Asher, and John Wheeler shared the brunt of the medical

burden. Dr. Peete has been a bastion of strength in the department of medicine throughout the years. Certain plans for extension, notably the construction of Ward D, the surgical operating suite, and the additional two stories on the Clinic Building, had to await a more propitious moment although funds had already been appropriated.

In 1945, clinical instruction of students at St. Margaret's Hospital was discontinued, ending an affiliation which had lasted for 40 years. In the early years of the Medical School, St. Margaret's Hospital furnished the bulk of clinical material, and, without its support and cooperation, the feeble infant school would have scarcely survived. The devoted service of its staff in teaching our medical students during those early years has placed the Medical School under lasting obligation. Drs. Bohan, Milne, Welker and Krall in medicine, Drs. Gray, Nesselrode and Barney in surgery have left a lasting impression upon generations of medical students.

(To Be Continued Next Month)



Bronchial Adenoma

FRANCIS E. McEVOY, M.D.,* *Wichita*

BRONCHIAL ADENOMA, first recognized at necropsy by Mueller in 1882, is a very interesting and controversial tumor. While similar cases were recognized by Heine in 1927 and by Reisner in 1928, it was not recognized clinically until 1930 when Kramer made the first clinical diagnosis and also recognized that the tumor might undergo malignant change. He correlated the slow growth of the tumor with the long duration of symptoms. Hamperl first distinguished two types of bronchial adenoma, the cylindroid and carcinoid in 1937, and drew attention to the fact that the carcinoid bronchial adenoma, unlike the carcinoid of the appendix, contains no argentophilic substance. It has been recognized since that in some tumors of the bronchus no clear dichotomy exists between the two types and biopsy may disclose a mixed type of tumor. Womack and Graham in 1938 reported a bronchial adenoma with hepatic metastases and because of this evidence of malignancy recommended pneumonectomy as the treatment of choice. Thorson, *et al.* in 1954 first reported that the abdominal carcinoid had the capability of liberating a hormone (serotonin) which caused characteristic symptoms and, in 1958 Dockerty, *et al.* reported the occurrence of a metastatic bronchial adenoma with the carcinoid syndrome. Over 25 cases have now been reported confirming this association, and two cases of oat-cell carcinoma of the lung with

the capability of liberating serotonin have been reported by Fontana. Enterline in 1954 noted the absence of bronchial adenoma in the Negro race, however, since then a few cases have been reported in the Negro female.

Our purpose in the present article is to present 16 cases of bronchial adenoma seen at the University of Kansas Medical Center hospital in the past 20 years and to give a brief review of the literature. This small series shows not only a few very typical cases of bronchial adenoma but also the association of bronchial adenoma with other disease processes (associations which have heretofore not been published).

Case Reports

Significant details of the cases reported are given in Table 1. Other features of the individual cases follow.

Case No. 1 was the only patient of this series to show evidence of clubbing of the fingers. While this is an uncommon manifestation, Zellos reported a ten per cent incidence in 40 patients. This patient had bronchial washings which suggested malignancy as did case No. 2. Bone formation was found in the tumor of cases No. 1 and No. 6 where some invasion of the bronchial cartilage was noted on pathological section. Cartilaginous invasion was also found in case No. 11 (*Figure 1*). Katz (1963) noted this not uncommon finding and attributed it to the cartilaginous invasion with subsequent ossification of the cartilage due to its inherent metaplastic ability.

Case No. 2 is that of a 36-year-old white female who nine years previous to admission, following a car

* This is one of a group of theses written by fourth year students at the University of Kansas School of Medicine, selected for publication by the Editorial Board from a group judged to be the best by the faculty at the school. Dr. McEvoy completed his internship at Wesley Medical Center, Wichita, in June, 1966, and is now a first-year resident in General Practice there.

<i>Case No.</i>	<i>Sex</i>	<i>Age</i>	<i>Race</i>	<i>Assoc. Disease</i>	<i>First Symptom</i>	<i>Second Symptom</i>	<i>Duration Symptoms</i>	<i>Tumor Location</i>	<i>Tumor Type</i>	<i>Follow-up</i>
1	F	47	W	Fibroids of uterus	Fever, pain (L) apex. rad. to occiput	Cough	1 mo.	LUL	Carcinoid	A and 10 yrs.
2	F	36	W	Amenorrhea Lactation 9 yrs. duration	Cough Chills Rattling Wheezing Lactation Flushing Diarrhea	Hemoptysis	8 mos. (i.e. resp. sym.)	LUL	Carcinoid	Lost to up at
3	M	14	W	(1) Traumatic injury to chest 5 yrs. prior (2) Recurr. medias. abscess (3) Histoplasmosis	Cough Fever	Malaise Anorexia	10 days	RLL	Carcinoid	Asym. 3 yrs.
4	F	34	W	None	Malaise Dyspnea Fever	Hemoptysis DOE Anorexia	3 mos.	RUL	Carcinoid	Lost to up at
5	F	71	W	Adult onset diabetes	Cough	Recurrent pneumonia	7-8 yrs.	LUL	Carcinoid	Lost to up (n at one
6	F	29	W	Emphysema Empyema 10 yrs. prior to admission	Recurrent pleurisy symptoms	Hemoptysis	12 yrs.	RLL	Carcinoid	L and yrs. al mova
7	F	49	W	None	RUQ pain rad. to neck Prod. cough worse in supine position	Hemoptysis	10 mos.	RLL	Carcinoid	A and yrs.
8	F	55	W	Uterine fibroids	Non-productive cough	Malaise	6 mos.	LLL	Carcinoid	A and yrs.
9	F	41	W	(1) Surg. hypothyroid and parathyroidism (2) Uterine fibroid 5 yrs. previous	Cough Sharp pain rad. from 5th ICS at RSB to intra-scap. area of back	Hemoptysis Night cough	14 yrs.	RML	Carcinoid	Lost to up

	<i>Pathology</i>	<i>Washings</i>	<i>Wt. Loss</i>	<i>Surgical Procedure</i>
mass	(1) Tumor invading perichondrium and chondrium (2) Bone formation in tumor	Sheets of cells, green stained cytopl. Marked var. size and shape Prom. nucleoli	None	Lobectomy LUL
tr. left bronchus na y bi-	(1) Carcinoid type B.A. with slight oncocytic change suggest endocrine appearance (2) Invasion of cartilage	Class IV, suggest Adeno Ca	18 lbs.	Lobectomy LUL
pte u. bronchus	(1) Cartilage and parenchymal invasion (2) Bronchiectasis (3) Histoplasmosis RLL and medias. lymph nodes	Not done	4 lbs.	Lobectomy RLL
on- lm arina	No invasion of cartilage noted	Inadequate for exam.	10 lbs.	Lobectomy RUL w. partial excision of R. Inter. bronchus
not ted	Carcinoid type adenoma oncocytic variant	Negative for tumor cells	None	Excision of adenoma w. partial segmental resection
oncho- vealed ectasis L	Bony metaplasia found in many areas of tumor Some invasion of bronchial cartilage Atelectasis and bronchiectasis distal to tumor	Not done	4 lbs.	Partial resection RLL
f ble most bely to g E	Carcinoid type B.A.	No malignant cells	10 lbs.	Lobectomy RML and RLL
due	(1) Carcinoid type B.A. (2) A few irreg. cysts filled with pinkish material (3) Atelectasis distal to tumor	Not done	None	Lobectomy LLL
R L ori- owed C gran- ms Bpsy— ptic Ca M	(1) Carcinoid type B.A. (2) Tumor present bronchial wall and peribronchial areas Pressure atelectasis present	Not done	30 lbs.	Lobectomy RML

<i>Case No.</i>	<i>Sex</i>	<i>Age</i>	<i>Race</i>	<i>Assoc. Disease</i>	<i>First Symptom</i>	<i>Second Symptom</i>	<i>Duration Symptoms</i>	<i>Tumor Location</i>	<i>Tumor Type</i>	<i>Follow-up</i>
10	F	53	W	Uterine fibroids	(1) Cough (all life) (2) SOB (3) Malaise	Hemoptysis Chest pains	1 week	RLL	Carcinoid	4 yrs. return bronch 2° stenosis
11	F	46	W	None	Dry cough URI Malaise	Hemoptysis DOE	6 yrs.	RLL	Cylindroid	A and witho toms later
12	M	72	W	Sarcoidosis	Fever Night sweats Dry cough	Prod. cough Hemoptysis	5 mos.	RLL	Carcinoid	Died post-op of pulmonary embolism
13	F	72	W	Hypertension	Hemoptysis DOE	Orthopnea Chest soreness Night sweats	2 yrs.	LLL	Carcinoid	Lost to follow-up
14	F	62	W	Diverticulosis	None Found by routine x-ray	None	—	RLL	Carcinoid	A and witho toms after my
15	F	24	W	None	Non-prod. cough Fever	RUL pneumonia Weakness Chest pain	8 mos.	RUL	Carcinoid	Lost to follow-up
16	F	46	W	None	Dyspnea Wheezing	Orthopnea PND	8 mos.	Trachea	Carcinoid	Local immo w. sy 3 yrs

tinued)

	<i>Pathology</i>	<i>Washings</i>	<i>Wt. Loss</i>	<i>Surgical Procedure</i>
grau- ss —in- te	Sessile carcinoid B.A. Focal atelectasis Acute and chronic pneumonia Ulceration through superior seg. bron- chus RLL	Clumps of cells showing hyperchromatism Class III	7 lbs.	Lobectomy RML and RUL 4 yrs. later RUL lobectomy for bronchiectasis
ete ob- RLL gating mass and thagic	(1) 1st admission—anaplastic Ca— small cell type (2) 2nd admission—cylindroid type B.A. Bronchiectasis lower and middle lobes	Not done	15 lbs.	Pneumonectomy 2nd admission
ct. of y a mass arci- pe	Tumor of carcinoid B.A. type Involves perineural lymphatics Focal necrosis, bronchiectasis Obstructive pneumonia, sarcoidosis	Class II	None	Lobectomy RLL
e red MSB	(1) Carcinoid type B.A. (2) Distal bronchiectasis (3) Bronchial erosions present	Rare cells suggestive of anaplastic Ca	None	Pneumonectomy, left
one	Typical carcinoid B.A.	Not done	None	Lobectomy RLL
n tumor RUL us—al- clud- — uate	(1) Carcinoid B.A. (2) Bronchiectasis distal to tumor	Not done	10 lbs.	Lobectomy RUL
ar at ob- LMSB rtially MSB	Cylindroid type B.A. by biopsy			Treated by radiation and nitrogen mustard

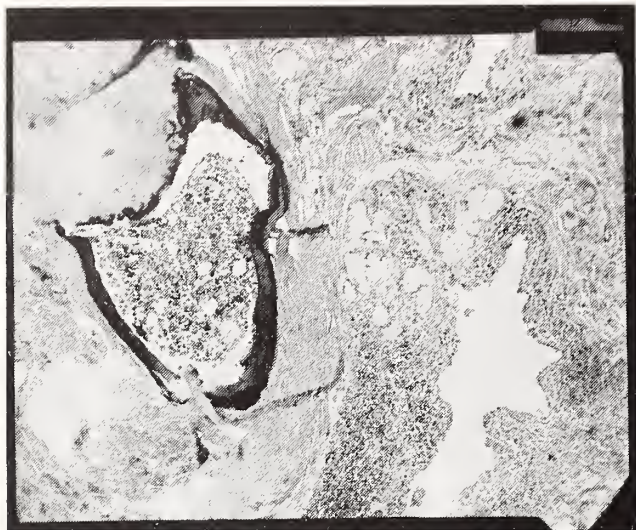


Figure 1. Cartilaginous invasion by cylindromatous type bronchial adenoma from case No. 11 ($\times 60$).

accident, noted the onset of amenorrhea and lactation. Eight months prior to admission she developed a "flu-like" illness with cough, chills, fever, and rhinitis. After several days she recovered but then apparently began a rather sudden onset of hemoptysis. During this time she also noted episodes of flushing and diarrhea. The episodes of hemoptysis continued until bronchial adenoma of the carcinoid type, oncocytoïd variant (Figure 2) was diagnosed and removed eight months later. The urine 5-HIAA was negative at the time of admission.

Case No. 3 had sustained a traumatic injury to the chest six months prior to admission. At the time of his first admission to his local hospital the patient had atelectasis of the middle and lower lobes of the right lung. During bronchoscopy the patient had a traumatic rupture of the esophagus which resulted

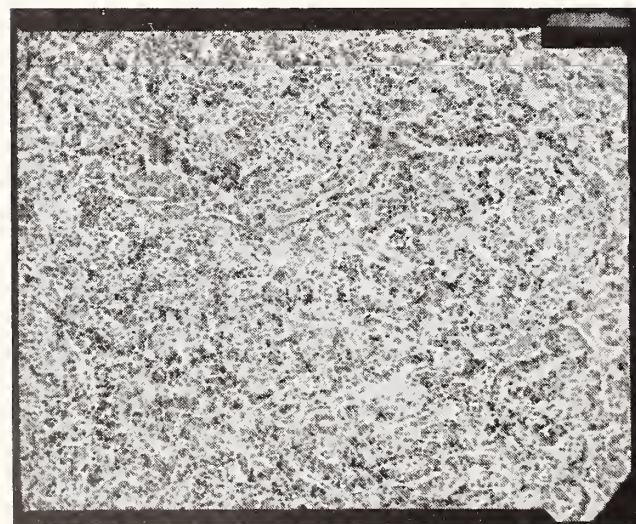


Figure 2. Carcinoid type bronchial adenoma, Oncocytoïd variant from case No. 2 ($\times 125$).

in a mediastinal abscess. Due to numerous recurrences he was treated for this over the next two years. It was then found that the patient had perforated through a Zenker's diverticulum. This was removed and the patient did well until three years later when he presented with cough, fever, and anorexia, and an x-ray diagnosis of collapse of the right lower lobe of the lung was made. Bronchoscopy with biopsy at this time revealed only granulation tissue; however, the febrile illness continued. Fourteen days later the patient was again bronchoscoped. Biopsy revealed a carcinoid bronchial adenoma. Right lower lobectomy was subsequently performed. The pathological report indicated the presence of not only carcinoid type bronchial adenoma but numerous granulomatous lesions of histoplasma capsulatum in the right lower lobe and the mediastinal lymph nodes (Figure 3).



Figure 3. Histoplasmosis granulomas from case No. 3 ($\times 60$).

Case Nos. 4, 5, 6, 7, 8, and 14 are more or less typical instances of uncomplicated bronchial adenoma.

Case No. 9 illustrates the limitations of interpretation of the bronchoscopic biopsy. The diagnosis from biopsy was anaplastic carcinoma. The diagnosis of the lesion removed at operation was a carcinoid type bronchial adenoma. A similar example is seen in case No. 11. The diagnosis of anaplastic carcinoma of small cell type with pleural invasion was made at the time of thoracotomy (Figure 4). The lesion was thought to be non-resectable. Five years later the patient was re-evaluated and at this time a second thoracotomy was done with the removal of a bronchial adenoma of the cylindromatous variety (Figure 5). Re-evaluation of the original slides did not change the first histological diagnosis. This patient is alive and with symptoms of only dyspnea 11 years later. These two cases thus clearly illustrate the difficulty

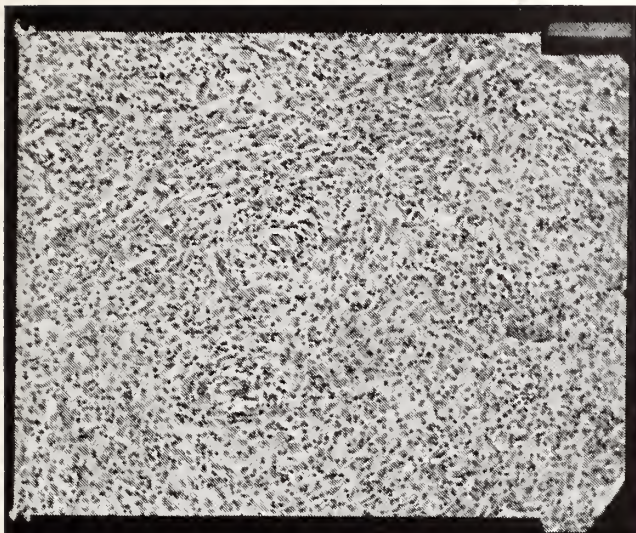


Figure 4. Anaplastic appearing area of cylindromatous type bronchial adenoma from case No. 11 ($\times 125$).

of correct histologic diagnosis even with an adequate biopsy.

Cases 12, 13, and 15 had normal chest films three, two, and three years prior to admission respectively. Two of these had hemoptysis when admitted. Case No. 2 died following operation due to thrombosis of the right pulmonary artery with infarction of the right middle lobe. Autopsy revealed the presence of diffuse lesions consistent with sarcoidosis (Figure 6). No similar case has been reported.

Incidence

Bronchial adenomas comprise between two and ten per cent of all tumors of the lower respiratory tract. Zellos in a study of 3,000 carcinomas of the lower respiratory tract found an incidence of only

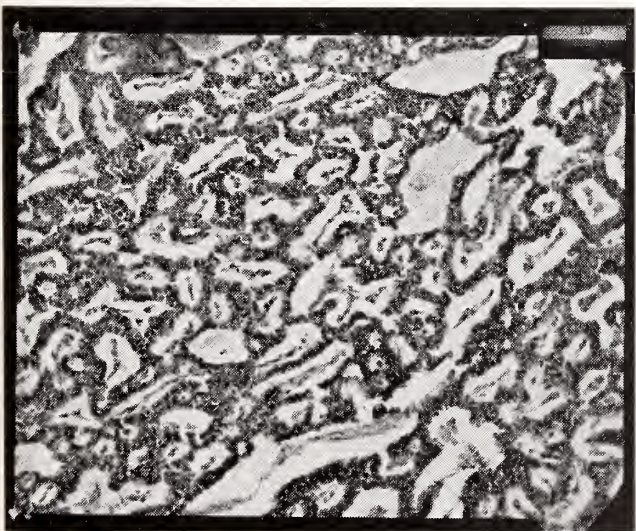


Figure 5. Typical "Swiss cheese" appearance of cylindromatous type bronchial adenoma from case No. 11 ($\times 125$).

1.3 per cent, Naderio and Lange reported 8 per cent, Willis reported 5 per cent. The true incidence probably lies in the range originally stated. The tumor is rare in the Negro race as is indicated by the fact that only four bronchial adenomas have been reported in the Negro female. A giant bronchial adenoma has been reported in a Nigerian male.

The tumor is considered by most to be more common in the female. Zellos reports a male to female ratio of 1:4; Weisel *et al.*, 1:2, which is supported by Payne and Soutter. McCook and Olinde report that the great majority of bronchial adenomas occur between the ages of 20 and 50 years, with the average age being around 40 years. Moersch and McDonald, at the Mayo Clinic, found that of 86 patients the average age of the female patient was 38 years and of the male, 42 years. The oldest reported case of bronchial adenoma is that of a 74-year-old woman while the youngest occurred in a four-year-old boy. Tumors classified as carcinoid adenomas according to the

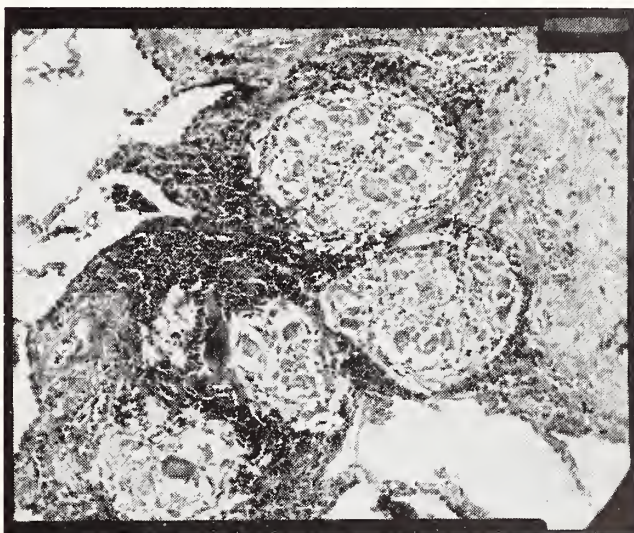


Figure 6. Sarcoid granulomas from case No. 12 ($\times 125$).

present classification constitute about 90 per cent of all bronchial adenomas.

Our series, though small, conforms closely to the above figures. There were no Negroes. The average age of diagnosis for the group was 47 years which was the average for the female patients. The males represented the extreme ages with 14 and 72 years. Forty-five years was the average age of onset of symptoms for the female patients. The male to female ratio was 1:7. There were two cylindromas in this group of 16 patients.

Pathology

Location—Most authors feel that the right lung is involved with bronchial adenoma more frequently

than the left. Zellos states the right is involved twice as often as the left and the most common site is in the right lower lobe. McCook and Olinde state 70 per cent occur in the right lung or bronchus and note that "despite this, the right upper lobe is the least commonly involved of all the pulmonary lobes." Weisel believes both sides are involved with equal frequency. In our series of 16, ten tumors were found on the right and five on the left, corresponding to the ratio Zellos gives. One cylindroma involved the trachea. The right lower lobe was involved in seven of the 15 instances while the right upper lobe was involved in two instances. Approximately ten per cent of all bronchial adenomas are peripheral, *i.e.* arise in the terminal bronchiole. None was peripheral in our series. The incidence of bronchial adenoma arising in the trachea is low; however, according to Enterline and to Liebow the cylindromatous adenoma is apt to occur more proximally than the carcinoid type and not infrequently involves the trachea; this was true in one of our two cases.

Tumor origin—The majority of writers accept the view that adenomas arise from the epithelium of the bronchial glands and their ducts as proposed by Reisner in 1928 and Kramer in 1930; however, as Moersch and McDonald point out, bronchioles less than 1-2 mm. in diameter do not contain mucous glands. Since approximately ten per cent of all bronchial adenomas arise from these terminal bronchioles their origin would be inexplicable by this theory. Hamperl believed that adenomas arise from a specialized group of cells known as oncocytes (which can frequently be found in the glands of the bronchial mucosa). This theory was further substantiated when Stout supposedly demonstrated the oncocytes from which the two major types of bronchial adenomas take origin. Womack and Graham supported the view that adenomas arise from residual embryonic tissue and were similar to the mixed salivary gland tumors. The cause was the failure of the embryonic buds to develop normal pulmonary structure. Churchill concluded that adenomas arise from a residual embryonic pulmonary lobe because histologically the two tissues are similar. The fact that Rogers produced adenomas in mice by applying nitrogen mustard to the bronchial mucosa is important in support of either of the first two theories.

Gross pathology—The carcinoid type adenoma has a smooth surface and varies in color from pink, through orange, to grayish white. The cylindroid adenoma also has a smooth surface but its color is pale yellow or grayish white. On sectioning, the former may be sufficiently hard to resist cutting or may be so soft as to feel mucoid while the latter has a cheesy consistency and is less hemorrhagic than the carcinoid adenoma.

Microscopic view—Hamperl in his original classification noted two types of bronchial adenoma—the carcinoid type which is similar to the carcinoid tumor of the appendix and the cylindroid type which is similar to the basal cell carcinoma. The tumor cells of the carcinoid type may be cuboidal, polyhedral, or spheroidal while the nuclei are spherical or ovoid and are large in relation to the size of the cell. They rarely show mitotic figures. The cells may be arranged in columns, solid cylinders or ovoids or have an acinar architecture. The cell structure may remain constant or may vary from area to area.

The cylindromatous adenoma is so designated because of its histologic resemblance to the cylindroma of the salivary glands. The cells of the cylindromatous adenomas are similar to those of the carcinoid type but are usually darker staining, give a prickle cell appearance, and are usually grouped about round or oval central spaces producing a "Swiss Cheese" effect. In some cases simple tubular arrangement is present. Mitoses are usually more frequent than in the carcinoid type and there is usually more dense and abundant connective tissue between the cell islands. According to Carlens the two important histological differences between the carcinoid and cylindroid adenomas are (1) the smaller, more darkly staining nuclei of the cylindroid tumor cells, and (2) the mucous filled cavities which can be stained by toluidine blue.

Malignant versus benign—The term "bronchial adenoma" would suggest a benign tumor of the bronchus; however, as has been repeatedly shown, this tumor has a definite malignant potential. While no metastases have yet become apparent in our cases, Goodner, *et al.* reported 44 per cent of a series of 27 were malignant. Of the five cylindromas, three produced fatal metastases. McBurney reported 87 metastases from a total of 811 bronchial adenomas. As Fraser points out the cylindroid type of adenoma is more likely to be malignant than the carcinoid type. According to Enterline and Schoenberg the chance of metastases and recurrence is seven times greater with the cylindroid type than with the carcinoid type. Wilkins, *et al.* reported the results of autopsies of five of 82 patients diagnosed as having bronchial adenoma, subsequently resected, and who died of unrelated causes. Of these five patients recurrence of the tumor (either local or metastatic) was found between six and 19 years following the initial diagnosis, thus indicating that this is a slow growing tumor, that a long latency period may exist before apparent metastatic sites are found, and that previous reports of the malignant potential of this tumor may be altered by future follow-up.

Numerous cases of the functioning carcinoid syndrome with the bronchial adenoma have been reported. Thorsen, *et al.* were first to postulate that the

clinical manifestations might be due to the production of large amounts of 5-hydroxytryptamine (serotonin) by the tumor. All of the cases of the syndrome reported prior to 1958 were related to metastatic abdominal carcinoids. Since Dockerty first described a case of hyperserotoninemia and the carcinoid syndrome secondary to metastasizing bronchial carcinoid, there have been several additional case reports. As Fontana, *et al.* note the carcinoid syndrome rarely occurs unless the primary tumor has undergone metastases—usually to the liver. Five of the 21 cases of the carcinoid syndrome he reported had no such liver involvement. Two patients studied by Warner, *et al.* had distinctly elevated urinary 5-HIAA without evidence of metastases leading these authors to suggest that determinations of urinary 5-HIAA may aid in the diagnosis of carcinoid tumors of the bronchus even when the carcinoid syndrome is not present. Fontana notes that the serotonin concentration of carcinoid tumor tissue is extremely variable and bears no direct relationship to the presence or absence of the carcinoid syndrome. In bronchial carcinoids, the concentration of serotonin is relatively low, usually less than 100 mcg. per gram of tissue, and frequently within normal range. Similar concentrations are encountered in carcinoids of the stomach, colon, and rectum. In contrast, the concentration of serotonin in carcinoids of the small intestine is almost always greater than normal, usually more than 100 mcg. per gram, and frequently about 1,000.

Frank and Lieberthal reported seven cases in which the pulmonary lesion was the first manifestation of disease; the carcinoid syndrome did not appear until four months to seven years later. The average interval was four years. Even though these primary lesions were removed, metastases were eventually responsible for carcinoid symptoms, thus adding support to our previous statement that the long term prognosis following removal of bronchial adenoma should be guarded.

It will be recalled that case No. 2 of this series had a nine year history of amenorrhea and lactation. While the urine 5-HIAA was negative at the time of the admission, a carcinoid type of bronchial adenoma was found at operation. Southern reported a similar case of a 22-year-old white woman who complained of a 50 pound weight loss. There were no signs of the carcinoid syndrome; however, biopsy revealed a carcinoid type bronchial adenoma. Four years later oligomenorrhea developed. Within three years complete amenorrhea had developed and estrogen as well as progesterone was necessary to induce withdrawal bleeding. In the next year there was a weight gain of 50 pounds, associated with hirsutism between the breasts and gradual enlargement of the hands and feet. On one occasion during an examination a small

amount of whitish fluid could be expressed from the breasts. A metastasis to the eye was found in one year. The author notes that previously reported cases of metastatic carcinoid did not show elevated cerebrospinal levels despite the high blood content. Intravenous infusion of large amounts of serotonin likewise failed to raise the cerebrospinal fluid level. A number of subjects with a variety of primary brain tumors, however, did show moderate to marked elevations of cerebrospinal fluid serotonin, although in several patients with isolated pituitary adenomas there was no detectable increase. The association of bronchial and pituitary tumors has been noted as an incidental finding in two previous cases of multiple endocrine adenomas. Lactation has not been found in these cases with elevated cerebrospinal fluid serotonin; however, it should be pointed out that lactation has been reported as a side effect of Reserpine therapy which causes the release of serotonin in the central nervous system. It is unfortunate that this case was lost to follow-up immediately following the removal of the bronchial adenoma.

Symptoms

Hemoptysis is the presenting symptom in the majority of the cases. These cases typically have a long history of non-productive cough that is not incapacitating. Eventually there is superficial ulceration of the epithelium overlying the tumor, with rupture of the vascular layer of connective tissue which lies immediately below the bronchial epithelium. Foster Carter reported hemoptysis as the presenting symptom in 81 per cent of the cases, Price Thomas reported 53 per cent, while Zellos reported only 30 per cent. There was a subsequent history of hemoptysis in another 20 per cent of the latter group. Weisel reported 23 of 38 had associated hemoptysis while six presented with severe hemorrhage. In this series cough was the presenting symptom in 25 of 38 cases. Weisel also reports severe dyspnea as the presenting symptom in three of 38 cases and wheezing in six of 38 cases. McCook and Olinde report that cough is the first and most frequent symptom of adenoma and occurs in 80 per cent of the cases. The cough may or may not be productive and is often worse at night when the patient is in a supine position. They also state that the hemoptysis which occurs in 60-70 per cent of the cases is characteristically sudden in onset and after a brief period of brisk, bright red bleeding, is equally abrupt in cessation. They also believe that the bleeding is not due to the chronic ulceration but rather commences as submucosal hemorrhage which soon ruptures the overlying mucosa releasing free blood. Hemorrhage at the time of or shortly following menstruation has been reported, but is not common. McCook and Olinde report infection distal to

the proximal obstructing tumor occurs in about 60 per cent of adenomas giving rise to fever, pleuritic pain, and pneumonitis. Irreversible changes, such as bronchiectasis, are frequent, although lung abscess and empyema are less common. The dyspnea which occurs in from 15-25 per cent of cases may be extreme with change in position (due to the ball valve effect of the tumor) and points strongly to the presence of a benign endobronchial tumor. Weight loss frequently seen in patients with bronchial adenoma is usually attributable to chronic pulmonary infection. Finger clubbing is found less commonly in bronchial adenoma than in bronchial carcinoma. This was present in ten per cent of the patients reported by Zellos. Peripheral bronchial adenomas frequently are asymptomatic, are discovered by routine x-ray, and may be multiple. On rare occasions bronchial adenoma may present with symptoms of metastatic disease e.g. carcinoid syndrome with unusual skin changes or osteoblastic bone lesions.

The average duration of symptoms is variously reported as being between two and eight years. McBurney, *et al.* reported a case in which symptoms were present for 36 years before the diagnosis of adenoma was made.

In the present series hemoptysis was present in nine patients some time during the course of the illness, three presented with a primary complaint of hemoptysis while nine had a primary complaint of cough. The average duration of symptoms was 3.3 years.

Diagnosis

As with any patient the first step is the history and physical examination. Important consideration here are female patients under 40 with a long duration of symptoms of bronchial obstruction, and a history of recurrent hemoptysis. Physical examination may be negative or may give characteristic findings of partial or complete local obstruction with or without the symptoms of infection (bronchiectasis, lobar pneumonia, pneumonitis, etc.) distal to the intrabronchial tumor.

The second step is the radiologic examination. On an A-P film of the chest a rounded, homogenous, circumscribed mass is characteristic. If obstruction is present, local emphysema, linear atelectasis, lobar or segmental pneumonia, may be evident radiographically. Tomography is usually helpful only in defining the extrabronchial portion of the tumor. Bronchography is useful to delineate the bronchi distal to the adenoma and detect the presence of bronchiectasis. With this procedure the bronchial adenoma often presents a "cap-shaped" appearance due to its sessile intrabronchial nature. This is in contrast to the car-

cinoma which often presents a "rat-tailed" appearance. As previously stated if metastases to the bone have occurred the lesion is likely to be osteoblastic.

The adenoma can be directly visualized bronchoscopically in approximately 95 per cent of the patients. It usually appears filling the bronchus and may be rounded, polypoid, lobulated, or finger shaped, and is pink or, rarely, yellowish white in color. In contrast to the rough surfaced bronchial carcinoma, the adenoma's surface is smooth and covered by intact bronchial epithelium. This bleeds more readily when touched or cut than the carcinoma. Due to the extreme vascularity of the tumor, biopsy at bronchoscopy is dangerous. On section the carcinoid type bronchial adenoma varies in consistency from mucoid to solid and is very resistant to cutting. On the other hand the cylindroid usually has a "cheesy" consistency and is less hemorrhagic than the carcinoid type. McCook and Olinde report that 90 per cent of bronchial adenomas can be diagnosed bronchoscopically; however, it should be pointed out that hemorrhage is frequent during and following bronchoscopy and may be fatal. Not infrequently the biopsy specimen is reported as carcinoma (usually oat cell), as happened on two occasions in this series.

Papanicolaou staining of the sputum is usually considered of value only when cells of an anaplastic carcinoma are found; however, the sputum of case No. 13 was reported as "rare cells suggestive of anaplastic carcinoma with numerous mitotic figures." Following resection it was found that this tumor of the carcinoid type had numerous mitotic figures per high power field and that the overlying epithelium had been eroded. It is due to the overlying epithelium (that is usually intact) that cells of the bronchial adenoma are infrequently found on sputum cytologic examination.

In patients with a history compatible with bronchial adenoma, blood serotonin and urine 5-HIAA levels should be determined. If positive, these tests will aid in making a definitive diagnosis, elucidate the probability of distant metastases, and when compared to postoperative values, will give some idea as to the adequacy of resection.

The final diagnostic step is thoracotomy. Case No. 11 exemplifies the need for adequate tissue biopsy as well as the difficulty involved at times in making a definitive tissue diagnosis. It should be pointed out that sections from the original biopsy were reviewed on two separate occasions following the initial surgery and that the original diagnosis was not changed. It was not until the second operation when the tumor was removed in toto and multiple sections taken that the tissue diagnosis was changed to bronchial adenoma of the cylindroid type.

Treatment

Prior to 1947 it was agreed by the majority of thoracic surgeons that the removal of the tumor itself and the lung parenchyma distal to it was the best treatment regardless of whether or not the parenchyma was damaged. Price Thomas in 1946 did the first sleeve resection for bronchial adenoma, a procedure subsequently followed by numerous other surgeons. At the present time bronchial resection appears to be the surgical treatment of choice and it has two main objectives: (1) to remove the tumor as radically as possible and (2) to preserve as much of the lung parenchyma as possible. The actual procedure depends on the site of the tumor, its extent, the presence or absence of irreversible lung damage beyond the block, the histologic type of adenoma, and finally, the state of the cardiorespiratory system. The possible procedures are: bronchoscopic removal, segmental resection, lobectomy, pneumonectomy, and bronchial resection.

Bronchoscopic removal is suitable for very ill or elderly patients or those with a poor cardiorespiratory reserve. Som found a recurrence rate of 70 per cent after this procedure illustrating the fact that adequate removal is difficult. Other disadvantages to this method are: metastatic spread cannot be detected, the tumor may be malignant, manipulation may cause severe uncontrollable hemorrhage, and repeated bronchoscopic removal may cause scarring of the bronchus with stenosis thus predisposing to future distal infections. Segmental resection, or lobectomy, or pneumonectomy are indicated when the tumor is located such that irreversible changes occur distal to the tumor.

The indications for bronchial resection as given by Zellos are: (1) a tumor lying in one of the main or lobar bronchi, (2) absent or reversible pulmonary damage beyond the tumor, (3) absence of invasion of surrounding lung parenchyma and metastases to the hilar glands, and (4) absence of malignancy.

Radiation has been used in the past though with disappointing results. Vieta and Maier reported 31 patients with cylindroid adenoma who were treated by radiotherapy. Six of the 31 survived more than five years without recurrence, but the remainder died after periods varying from four months to four years. It is generally recognized that bronchial adenomas are radioresistant lung tumors.

Prognosis

This depends largely on the stage at which the diagnosis is made, the type of bronchial adenoma, and the condition of the respiratory system. If the diagnosis is made early and there has been adequate resection of the tumor the cure rate is about 95 per cent. As already stated the chance of metastases and recurrence is seven times greater in cylindroma as

opposed to the carcinoid type bronchial adenoma. Without resection death is certain and is often due to pulmonary infection distal to the obstructed bronchus. It should again be emphasized that usually this is a slow growing tumor with malignant potential. In one case previously reported metastases did not appear for 15 years. Five other patients in the above series who died of unrelated causes were found to have metastatic disease over five years after the initial resection. Goodner, *et al.* reported that 57 per cent of 21 patients with clinically apparent tumors available for five year follow up have survived that period. In 44 per cent of this series of 27 patients the tumor was malignant. Twenty-five per cent of this subgroup survived five years or longer. Tucker and Yodaiken have reported a mean survival time for the carcinoid syndrome of bronchial origin as approximately five years in the reported cases. Wilkins reported an operative mortality of 4.5 per cent in 67 resections. There was one postoperative death in our group.

Summary

Sixteen cases of bronchial adenoma and a brief review of the literature have been presented. In general this is a slow growing, intrabronchial tumor capable of endocrine and metastatic activity. It most commonly occurs in middle aged Caucasian women who present with a long history of symptoms and who are prompted to seek help following the first episode of hemoptysis. Even with adequate resection the prognosis, though generally good, should be guarded.

EDITOR'S NOTE: References may be obtained by writing the JOURNAL, 315 West 4th Street, Topeka, Kansas 66603.

NEW FILM ENCOURAGES MEDICAL CAREER

"Someone You Can Trust—Someone You Can Be," a 29-minute color film, encourages high school students to consider a career as a medical doctor. The film was produced for the American Academy of General Practice by Smith Kline & French Laboratories. It is designed for use in the Academy's new physician recruiting effort: the Family Practice Careers program.

"Someone You Can Trust—Someone You Can Be" is part of an ongoing effort to help solve the physician shortage facing this country.

For further information contact Mr. William DeLay, Director of Public Relations, the American Academy of General Practice, Kansas City, Missouri, or Mr. William Learnard, Public Information, Smith Kline & French Laboratories, Philadelphia, Pennsylvania.



C.P.C. ~

Acute Onset of Nausea, Vomiting, Flank Pain, and Fever Culminating in Sudden Death in Two Days

ON HER FIRST KUMC VISIT on April 16, 1963, this 24-year-old old Negro housewife complained of bilateral flank pain, nausea, vomiting, chills, and fever.

She said she had been well until her teeth were extracted April 10, 1963. Because of pain and soreness in her mouth, she was given one injection of penicillin and some aspirin tablets. These nauseated her, and on April 14, 1963, she vomited and had chilling sensations. She awoke at 6:30 a.m. on April 16 with severe aching pain in the left flank, followed by chills and fever, and she came to the KUMC emergency room. She was unable to void so a catheterized urine specimen was obtained. She was told she had urinary tract infection, and was given sulfamethoxazole which she vomited.

Because the pain moved to include the right flank and suprapubic area, she again came to the emergency room on April 17, 1963, and was still unable to void. She was catheterized, but only 130 ml. of urine was obtained. The patient was therefore admitted to the hospital. She denied any hematuria, dysuria, or pyuria. She reported a bowel movement on April 16, 1963, as normal.

The patient was gravida 3 (para 2, abortion 1) and had had a miscarriage in September of 1962. This was followed by regular menses with passage of clots of blood and swelling of her abdomen for

which she was hospitalized in February of 1963. At that time a left salpingo-oophorectomy was performed. She had had normal menses since that time, the last being April 4 to April 9, 1963. The patient had taken norethynodrel with mestranol (Enovid®) tablets, one daily, April 10 to April 15, 1963. She had been well all her life and disclaimed any other hospitalizations. She had been told that she had "anemia" in February of 1963. Other diseases were denied.

The patient had had frequent sore throats about seven years previously, but none since that time. She had noticed some slight dyspnea on exertion with the onset of her present illness; cardiac and other symptoms were denied. Her appetite had been good until April 15, 1963; she had taken very little food since that time. She said that her flank pain, on both sides, had always radiated to the lumbar area. Symptoms relating to the extremities and the neurological system were absent, according to the patient.

Her mother and father were living. Her son had an atrial septal defect for which he was being treated here at the University of Kansas Medical Center. There was no family history of sickle cell disease, diabetes, tuberculosis, or heart disease.

Her blood pressure was not obtainable by auscultation in the left arm. In the right arm it was 110/90; left leg, 130/100; and right leg, 150/100. The respiratory rate was 14; the pulse rate, 68 and rhythmic. The oral temperature was 99 degrees. She was a well-developed, thin, Negro woman in acute distress, complaining of severe right upper quadrant and back pain. She was well-oriented.

Examination of the head revealed no abnormalities. The ears were clear. Eye movement and reflexes were

Edited by Jesse D. Rising, M.D., and Mahlon Delp, M.D., from recordings of the proceedings of the conference participated in by the departments of medicine, pediatrics, surgery, radiology, gynecology and obstetrics, and pathology of the University of Kansas Medical Center as well as by the third and fourth year classes of students.

normal, and retinal sheen was present bilaterally. The patient was edentulous. Her throat was normal. Her neck was supple, and the thyroid was palpable but not grossly enlarged.

The chest was normal to inspection, palpation, auscultation, and percussion. The point of maximum cardiac impulse was in the fifth intercostal space at the midclavicular line. There was no apparent cardiomegaly, and no thrill or murmurs were found. The second heart sound was split, and a third heart sound was present.

The abdomen was soft with striae, and bore a left lower quadrant surgical scar. More tenderness was present in the right flank and costovertebral area than in the left. Bowel sounds were hypoactive. Pulses were greatly decreased in the left arm, but an axillary pulse was palpable on the left. There was no edema. The pelvic examination was normal except for absence of the left adnexae. Cranial nerves were intact, and movement and sensation were normal. The deep tendon reflexes were active. Babinski's sign was not present.

The urine had a specific gravity of 1.020, a trace of albumin, a few casts, many bacteria, and 1 to 2 leukocytes per high power field. There was 3 plus acetone. Repeat urine analysis showed a specific gravity of 1.022, 2 plus albumin, 0.8 per cent glucose, pus casts, granular casts, and 25-30 leukocytes per high power field. The leukocyte count was 13,820 with 87 per cent lymphocytes, 3 per cent eosinophiles, and 3 per cent monocytes. The hemoglobin was 9.0 grams per cent with a hematocrit of 33. Platelets appeared adequate. There was one nucleated red cell per 100 white cells. The BUN was 13 mg. per cent; creatinine, 1.3 mg. per cent; cholesterol, 138 mg. per cent; CO₂, 22 mEq per L; sodium, 136 mEq per L; potassium, 2.9 mEq per L; and chloride, 100 mEq per L. The sickle cell preparation was negative. The serum amylase was 116 units per cent; direct bilirubin, .2 mg. per cent; and total bilirubin, 1.1 mg. per cent. Protein electrophoresis showed gamma globulin, 18 per cent; beta globulin, 15 per cent; alpha-2 globulin, 12 per cent; alpha-1 globulin, 5 per cent, and total protein, 6.1 grams per cent.

The patient was placed at complete bed rest with a diet containing one gram of sodium and 1,500 calories. She was given 200 mg. of trimethobenzamide (Tigan®) every four hours for nausea and 65 mg. of dextropropoxyphene (Darvon®) every four hours as needed for pain. An intravenous infusion of 1000 ml. of five per cent dextrose with 40 mEq of potassium chloride in water running at 40 to 60 drops per minute was administered. The patient did fairly well through the night, but she required 50 mg. of dextropropoxyphene intramuscularly on two separate occasions for abdominal pain.

She became quite tachypneic at 9:00 a.m. on April 18, 1963. Her heart rate was 110-120 per minute, her respiratory rate was 30 per minute, and the chest was clear. There was costovertebral angle tenderness bilaterally. She appeared to be apprehensive, and was thought to be hyperventilating. Her breathing became more rapid, and the respiratory rate went up to 40 per minute. At 10:55 a.m. she became apneic, and no heart sound was heard. Artificial ventilation and cardiac massage were started immediately. An electrocardiogram showed no electrical activity initially, but later showed multi-focal ventricular premature contractions after 1 ml. of epinephrine was given by intracardiac injection. The pupils became dilated and remained that way. Resuscitation efforts were stopped at 11:35 a.m. when it became apparent that they were useless.

Dr. Mahlon Delp (moderator): Are there any questions for Dr. Michaelbach?

Owen Carper (student):* Was penicillin given before the teeth extraction?

Dr. Michaelbach (resident in medicine): No, penicillin was not given.

Herbert Cooper (student): Did the patient continue to have nausea and vomiting after her admission?

Dr. Michaelbach: Yes.

Shepard Fountaine (student): Could we have a better description of the patient's flank pain? Was it continuous?

Dr. Michaelbach: It was continuous and fairly severe pain.

Mr. Fountaine: What was her urinary output before the first emergency room admission, and was 130 ml. all of the urine she put out during her hospitalization?

Dr. Michaelbach: Actually she urinated about 250 ml. during her hospitalization. She thought her urinary output had been normal before admission.

Mr. Billy Kay: Is the reason for the salpingo-oophorectomy known?

Dr. Michaelbach: Yes. She had pelvic inflammatory disease on the left side.

Mr. Carper: Were blood cultures taken, and what was the result?

Dr. Michaelbach: Blood cultures were taken and were negative.

Mr. Cooper: Did the patient have any prior history of thrombophlebitis?

Dr. Michaelbach: No.

Mr. Fountaine: Were any murmurs heard during the hospital course?

Dr. Michaelbach: No murmurs were heard.

* Although a student at the time of the conference in January 1964, he, like the others referred to as students, received the M.D. degree in June, 1964.

Mr. Carper: Could we have a better description of the split second sound? Was it fixed?

Dr. Michaelbach: It seemed to be a variable split.

Mr. Cooper: Was there any fullness or muscle spasm in the flank?

Dr. Michaelbach: There was much voluntary guarding to palpation of either the flank or the costovertebral area. She would splint some. There was no fullness.

Larry Kompus (student): Can we have a better description of the left arm with regard to color, size, pain, or temperature.

Dr. Michaelbach: The color appeared normal. It was the same temperature as the right arm. The pulses were just barely palpable from the shoulder distally.

Mr. Fountaine: Was there any hyperpnea associated with the terminal tachypnea?

Dr. Michaelbach: Yes.

Mr. Kay: Was the blood pressure recorded on the day of death?

Dr. Michaelbach: Yes, it was 130/100.

Mr. Carper: What was the temperature course during the hospitalization?

Dr. Michaelbach: It varied between 98.6 and 100 degrees F.

Mr. Cooper: Was the patient taking aspirin at the time of admission?

Dr. Michaelbach: No.

Mr. Kay: Do we know how much sulfamethoxazole she took?

Dr. Michaelbach: She took four tablets. She was given no more because she vomited.

Mr. Fountaine: Was the patient cyanotic at any time?

Dr. Michaelbach: No, she was not.

Mr. Kay: What was the depth of her respiration during the terminal event?

Dr. Michaelbach: Respiration terminally was quite shallow and rapid.

Electrocardiograms

Mr. Fountaine: We have just one electrocardiogram (Figure 1). It was taken on April 18, the morning of her death. There is normal sinus rhythm with a rate of about 100. There is inversion of the T waves in leads 2, 3, and aVf. There are no significant U waves. Progression of the R waves across the precordium is normal. This electrocardiogram is suggestive of myocardial ischemia.

Dr. Delp: Do you have any comments, Dr. Hayes?

Dr. William Hayes (cardiologist): The angle between the QRS and the T vector is wide. I would say this is a nonspecific abnormality, not clearly an ischemic change. Myocardial ischemia might be the cause. I think the QT interval is normal. I am in-

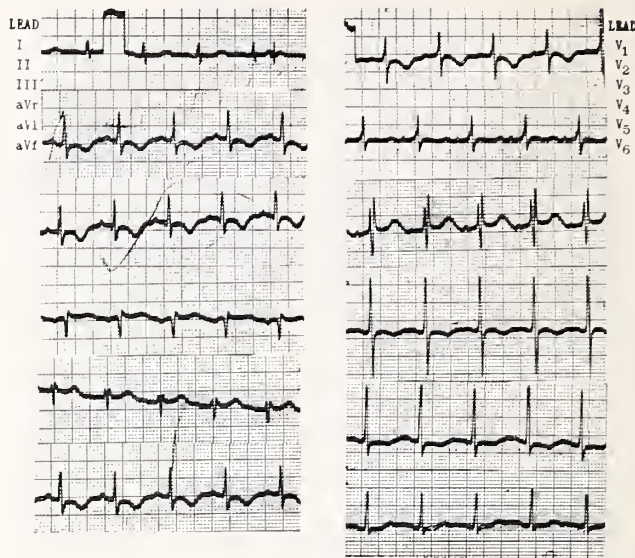


Figure 1. Electrocardiogram taken on April 18, 1963.

terested in the fact that the initial R wave in V-1 and V-2 is far wider than it should be. This suggests right ventricular hypertrophy. The mean electrical axis is about 60 degrees.

Dr. Delp: Thank you. Let us have the x-rays.

Mr. Kompus: We have four x-rays, all taken on the initial visit to the emergency room on April 14. The first film is an anteroposterior of the chest (Figure 2) and discloses no bony abnormalities. The size of the chest appears normal. I see no infiltrate. The left cardiac silhouette appears normal. The right silhouette is somewhat suggestive of right atrial en-

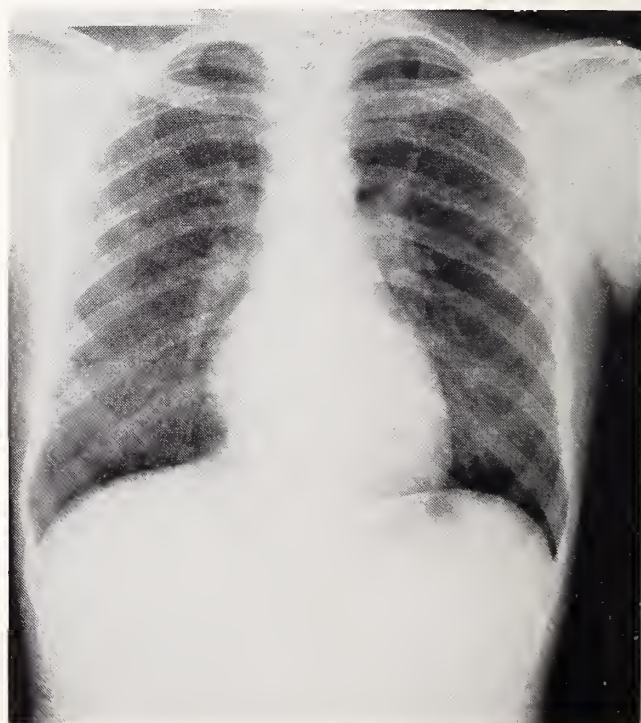


Figure 2. Posterior-anterior film of the chest taken on April 14, 1963.

largement. The hilar markings are prominent. I interpret this as possible enlargement of the right atrium and prominence of the vascular markings.

The second x-ray is a lateral of the chest. The retrosternal space appears somewhat narrow, which I interpret as showing right ventricular enlargement. The third film is a flat plate of the abdomen. I see no bony abnormalities. The psoas shadow is somewhat obliterated on the left. This may or may not be of significance. The right kidney shadow seems to be enlarged. On the left I am not sure I can see the kidney shadow. I interpret this film as showing right kidney enlargement.

The fourth film is an upright of the abdomen. The gas pattern in the stomach appears normal. There is a glassy appearance, and the psoas shadows are not visible. The right kidney appears enlarged. This film is also suggestive of right kidney enlargement.

Dr. Delp: Thank you. Dr. Germann, do you have any comment?

Dr. Donald R. Germann (radiologist): I think the heart is probably within normal limits and the kidneys also are within the normal size range.

Dr. Delp: Let us begin our discussion with Mr. Kay's differential diagnosis.

Discussion

Mr. Kay: Our case for presentation today is that of a 24-year-old Negro housewife who came in with the complaint of a sudden onset of nausea, vomiting, bilateral flank pain, chills, and fever, culminating in sudden death two days after the onset of her symptoms. I shall limit my discussion to those entities which characteristically show this picture. Because primary renal pain classically refers to the costovertebral and flank areas, our attention will first focus on this organ system, then on other causes of this type of pain to round out this differential diagnosis.

In any instance of abdominal pain one must consider the common causes of that symptom. We exclude neoplastic disease because of lack of prior history and because of the fulminating clinical history of our patient. Pancreatitis is unlikely because of atypical pain and normal serum amylase. Pelvic inflammatory disease and acute appendicitis are eliminated because of atypical pain and incompatible physical findings. Cholecystitis may begin with nausea, vomiting, and flank pain, but that diagnosis becomes unlikely with the onset of pain in the left flank. Infectious hepatitis may occur with the findings seen in our patient, but we rule out this diagnosis on the basis of normal serum bilirubin and an atypical clinical course. Bacterioides septicemia has been reported one to two months after pelvic operations. Nausea, vomiting, and fever, together with multiple thromboembolic phenomena, are frequently seen in

this disease. Lack of jaundice, seen in over 50 per cent of these patients, and a normal bilirubin tend to eliminate this entity as a possible diagnosis.

Acute glomerulonephritis may cause the symptoms seen in our patient. Fever, chills, and flank pain are common early manifestations. We rule out this diagnosis because of the absence of hematuria, red blood cell casts in the urine, and edema.

Acute bacterial endocarditis is a rapidly progressive infection of normal or abnormal heart valves which usually follows a heavy bacteremia. The onset is usually between the ages of 15 and 30, and it often occurs after dental extraction. Unexplained fever, chills, nausea, and vomiting are common in this disease. Pain in the flank and abdomen may occur secondary to the embolic phenomena. Normochromic anemia, microscopic hematuria, proteinuria, and renal casts are commonly seen. The lack of a history of heart disease as well as the absence of heart murmurs, positive blood cultures, splinter hemorrhages, splenomegaly, and cutaneous lesions militate against this diagnosis.

Renal abscess, perinephric abscess, acute necrotizing papillitis, and acute tabular necrosis are ruled out because of atypical history and physical and laboratory findings.

The collagen diseases frequently produce symptoms and signs of renal disease indistinguishable from acute glomerulonephritis, renal vein thrombosis, and renal infarction. We exclude such diseases because of the lack of a supporting history and because of the fulminating course of our patient's illness.

Acute pyelonephritis, bacterial in origin, is characterized by the sudden onset of chills, fever, and pain in the flank and back, nausea, and vomiting. Symptoms of cystitis develop. Frequency, urgency, nocturia, and dysuria are frequently seen. The white count may reach 40,000 and the sedimentation rate is increased. The urine is usually cloudy, shows little protein, and contains large amounts of pus and bacteria. Renal function as measured by specific gravity of the urine may be only slightly affected. Bacteremia is not uncommon. A report of 277 cases of acute pyelonephritis which made up 0.2 per cent of the hospital admissions in the Massachusetts General Hospital during the years 1948 to 1956 indicated that all patients recovered except 2.5 per cent who died after repeated episodes of septicemia. This disease is an attractive diagnosis for our patient for it would have been quite possible for her to have acquired acute bacterial pyelonephritis via the hematogenous route secondary to tooth extraction. However, without the history of urinary frequency, urgency, and dysuria, and because of the rapidly fulminating course seen in this patient, this diagnosis be-

comes less plausible, and we feel we have a better explanation for our patient's illness.

We now come to a consideration of renal vein thrombosis. The patient is suddenly seized with pain in the loin which is constant and persistent. The pain interferes with sleep, and little relief is afforded by narcotics. It often radiates to the groin and may persist for a week or longer. The patient is acutely ill and feverish and has chills. There is fullness, tenderness, and muscle spasm in the flank. Much protein is found in the urine. Hematuria is often transient, so it should be searched for diligently. Often there is also evidence of thromboembolism in the lungs, pelvis, limbs, and elsewhere. Occlusion of the veins occurs gradually in many of the patients described. In most instances, if the patient survives the acute thromboembolic episode, he progresses to the nephrotic syndrome.

There are four etiologic varieties of renal vein thrombosis: (1) thrombosis of the inferior vena cava and renal vein secondary to extension of thrombi in the legs or pelvis; (2) thrombotic occlusion of the vena cava secondary to invasion by malignant neoplasms or to external compression; (3) renal vein thrombosis secondary to renal disease; and (4) primary renal vein thrombosis. Another factor concerning spontaneous intravascular clotting which should be mentioned in relation to our patient is the speculation which now exists concerning the possible relationship between the use of synthetic progestational agents as oral contraceptives.

Since the first case reported in England in 1961, there have been 347 instances of thrombophlebitis or phlebothrombosis among women using progestogens as contraceptives. The paucity of published information has tended to keep this problem in a relatively unsettled state, but it must be mentioned in passing that it could be a possible etiological agent for our patients.

In a recent review of 38 cases of renal vein thrombosis there was bilateral thrombosis of the main renal vein, the major tributaries, or both. In 11 cases there was also thrombosis of the inferior vena cava; in 9 cases, thrombosis of the iliofemoral veins; and in 14 cases, thromboembolic occlusion of the pulmonary arteries. The prominent association of pulmonary artery occlusion with renal vein thrombosis seems to account for the frequency of dyspnea, pleuritic pain, and cardiac failure seen in these patients. This disease entity would seem to best fit the findings in this patient.

Dr. Delp: Thank you, Mr. Kay. Mr. Carper, what is your diagnosis?

Mr. Carper: Renal vein thrombosis bilaterally.

Dr. Delp: Mr. Cooper?

Mr. Cooper: The same.

Dr. Delp: Mr. Kompus, what is your diagnosis?

Mr. Kompus: Same.

Dr. Delp: Mr. Fountaine?

Mr. Fountaine: Same.

Dr. Delp: Suppose you go a little deeper into that, Mr. Carper. How about pathogenesis, etiology, and so forth?

Mr. Carper: This patient had been vomiting. It is quite possible that she was dehydrated. I am also concerned about the possible relationship of Enovid®.

Dr. Delp: You don't think that was something someone dreamed up to scandalize the pharmaceutical manufacturers, do you?

Mr. Carper: No.

Dr. Delp: Mr. Cooper?

Mr. Cooper: The etiology of primary renal vein thrombosis is still not known. Almost spontaneous thrombosis develops in the renal veins. This disease is seen rarely in adults; it is much more common in children. It is reported that these children usually have had diarrhea and vomiting and are dehydrated. The dehydration is thought to be a possible cause of the renal vein thrombosis.

Mr. Kompus: Other than primary bilateral renal thrombosis there is a possibility that thrombi from her pelvis occurred secondary to the operation a few months earlier.

Mr. Fountaine: Primary bilateral renal vein thrombosis might be on another basis. It has been reported that hypercoagulability is sometimes present in women who have been pregnant, and that it may be on a hormonal basis.

Mr. Kay: I think that the possibilities of kidney infection, dehydration, and the prior pelvic operation all have to be considered.

Dr. Delp: All right. You are all committed to the diagnosis of renal vein thrombosis. Now let us see if you apply this diagnosis to the signs and symptoms this patient had. Mr. Carper, will you comment about the electrocardiogram we saw?

Mr. Carper: I think the T wave inversion would go along with embolic phenomena and that the evidence of right heart hypertrophy would also bear this out.

Dr. Delp: Mr. Cooper?

Mr. Cooper: I agree. Several cases of renal vein thrombosis reported in the literature have presented with the symptoms of pleuritic pain and the picture of pulmonary embolus.

Dr. Delp: Mr. Cooper, do you think this patient had embolization to the kidneys?

Mr. Cooper: No, I think she did not.

Dr. Delp: Mr. Kompus?

Mr. Kompus: With bilateral renal vein thrombosis one would expect to see bilateral kidney enlargement.

Dr. Delp: Mr. Fountaine, I want you to talk about the electrocardiogram.

Mr. Fountaine: I cannot explain the T wave inversion, but the right heart hypertrophy can be explained on the basis of pulmonary embolization.

Dr. Delp: Mr. Carper, do you remember the chest film? Dr. Germann said it was normal. Do you have any comments?

Mr. Carper: No.

Dr. Delp: All right, the patient had a blood urea nitrogen on admission of 13 mg. per cent. Mr. Kompus, does this sound like renal vein thrombosis?

Mr. Kompus: By this time I would have expected to see the BUN elevated.

Dr. Delp: Mr. Fountaine?

Mr. Fountaine: Renal vein thrombosis does not necessarily produce renal failure.

Dr. Delp: Mr. Kay?

Mr. Kay: I agree.

Dr. Delp: Mr. Carper?

Mr. Carper: She had quite an acute onset.

Dr. Delp: Let us get back to this hyperventilation which must have been quite striking. The respiratory rate was 40.

Mr. Carper: This would have to be explained by pulmonary embolization.

Mr. Cooper: I think this could be pulmonary embolization, but it also could be spontaneous intravascular clotting in the pulmonary arteries.

Mr. Kay: I think she died of pulmonary embolization.

Dr. Delp: Don't you think it is possible she aspirated? We will find out in a few moments. Tell me what connection, if any, the abortion in September, the extraction of the teeth, the surgery in February, 1963, had with the terminal illness.

Mr. Cooper: I think the history of pelvic inflammatory disease and pelvic surgery would be compatible with a pelvic clot which could have extended to the renal vein.

Dr. Delp: Mr. Kompus?

Mr. Kompus: I agree with Mr. Cooper.

Mr. Fountaine: I am not certain about the teeth extraction. I think Mr. Cooper's comments are the pertinent ones.

Dr. Delp: She was well before the teeth were extracted, wasn't she? But I will admit this is not an easy case to diagnose. Dr. Azarnoff, may we have your comments?

Dr. Daniel Azarnoff (internist): The discussion so far has been focused on the venous side of the circulatory system. If you look at the protocol, however, one thing which is pointed out is that the patient had no blood pressure in her left arm. This is certainly an arterial phenomenon. I would like to know if this was also the case on the previous two emergency room visits? There is evidence that this patient may have had previous illnesses that might

have contributed to thromboembolic phenomena. She had previous pelvic inflammatory disease. She had penicillin which, if it produced a reaction, might have increased that possibility.

The patient also received Enovid®. I would like to hear what Dr. Carter has to say about ovarian hormones which increase the concentration of certain blood clotting factors. Certainly males receiving conjugated estrogenic substances shortly after a myocardial infarction do have an increased incidence of a second infarct. That is why it is better to withhold estrogen for three months. On the other hand, there is no absolute evidence that the contraceptive tablets increase thromboembolic phenomena. I suppose, in retrospect, no matter what was wrong with this patient the prophylactic administration of heparin might have been helpful. Also in retrospect, I wonder if this is one case where a massive dose of fibrinolytic might have been in order.

Dr. Delp: Do you have any comments, Dr. Lukert?

Dr. Barbara Lukert (fellow in medicine):* The well known statistical material on Puerto Ricans does not show an increased incidence of thromboembolic phenomena in people on Enovid®. When we initially saw this patient we thought she had pyelonephritis, but after a few hours of observing her it became obvious that this was not the case. We then considered thrombotic phenomena because of the increased pulse rate, and we were thinking more of sickle cell disease.

Dr. Delp: Would you please comment, Dr. Hayes?

Dr. William Hayes (internist): I believe that the patient died of pulmonary embolization. I think this came from a venous source in the abdomen or pelvis somewhere. However, a sudden embolus should not produce an electrocardiogram like this. An embolus to the pulmonary artery produces many acute changes. It may produce an S₁, S₂, S₃, pattern. It may produce ST segment and T wave changes. It may produce a right bundle branch block. It usually does not produce a hypertrophy pattern as we see here. If the hypertrophy pattern is seen you have to say that the process has been going on for some time, at least six weeks to three months. Maybe she had been embolizing her lungs for as long as that. She might have been embolizing from the pelvis for a period of time, and then had a fatal embolization in the hospital. This is the only way I could account for this because I do not see other changes in her history or physical examination to account for right ventricular hypertrophy. I cannot diagnose any sort of congenital or

* At the time of the CPC a fellow in the section of metabolic disease, now in the private practice of internal medicine.

acquired heart disease to account for it in the absence of a murmur.

There is one other diagnosis that ought to be considered. That is a dissecting aneurysm, but this patient is quite young to have this. The thing that makes the diagnosis inviting is the absent pulse in her right arm. However, if an aneurysm is dissecting medially and gets high enough into the arch to occlude the subclavian artery, one would expect her to have pain high in her back, and one would expect symptoms in the arm as a result of an acute occlusion. Why then did she have reduced pulses in that arm? If she had reduced pulses from a sudden occlusion such as an embolus, thrombosis, or aneurysm, she should have had pain, pallor, perhaps even weakness or paralysis of that arm. She apparently did not have these symptoms, but could have overlooked them because of more severe symptoms elsewhere. We might think simply of an anomalous circulation to that arm as being the cause of the weak pulse.

Dr. Delp: Dr. Ruth?

Dr. William Ruth (internist): I think this lady had thromboembolic disease, and I would not be particularly disturbed about the findings we have from the x-rays or the electrocardiogram at this point. This woman was young, and it is entirely possible that she had been having embolization to her lungs for a long time. It is possible that these were small enough to avoid infarcting pulmonary tissue and simply destroyed the pulmonary beds.

Dr. Delp: In any textbook presentation of thromboembolic disease the discussion is preoccupied with the classical series of events, the thrombophlebitis occurring somewhere distal to the heart and the pulmonary circuit and then the tearing loose of the thrombotic mass from the original clot. Then this embolizes to the pulmonary circuit. This is one possibility. I assert another possibility because of the fact that no blood pressure was obtainable in the left arm. This is the possibility of a state of hypercoagulability, as had been mentioned. Coagulation might have been occurring in both the arterial and venous systems simultaneously. Let us hear what Dr. Carter has to say.

Dr. John R. Carter (pathologist): In 1889, William Welch attended a meeting of the American Association of Physicians in New York City and made the statement that there were many pathologists who saw quite a number of cases of thromboembolic phenomena in young women in which they could not explain the mechanism or cause. Very unfortunately in this year of grace, the same statement can be made.

The patient did indeed have a very unusual type of thromboembolic disorder, but we do not have all of the answers to explain the mechanism. We do know that the cause of death was pulmonary thrombosis. As far as can be determined from the patholog-

ical material, the clots were thrombi formed in situ. There were occlusive thrombi in the right pulmonary artery, branches of the left pulmonary artery (*Figure 3*), in the distal portion of the posterior descending branch of the right coronary artery, the splenic artery,



Figure 3. Recent thrombi (arrows) occluded the right (R) and branches of the left (L) pulmonary arteries.

in both renal arteries (*Figure 4*), the distal superior mesenteric artery (*Figure 5*), the right superior intercostal artery, and a partially occlusive thrombus in the hepatic artery. The veins were not involved, nor was there any evidence of arteritis or of a hypersensitivity reaction. Most of the thrombi were four to five days of age. Some were more recent, and some were older. Lamellar or layering phenomenon was seen in some of the thrombi.

One of the earliest changes may be seen in some of the pulmonary arterioles. This consists of an agglutination of platelets with a few red blood cells, and might be referred to as a very early or incipient



Figure 4. Both renal arteries were occluded by recent thrombi (arrows), and these produced multiple patchy areas of infarction (I).



Figure 5. The occluding, recent thrombus in the superior mesenteric artery shows a layering phenomenon.

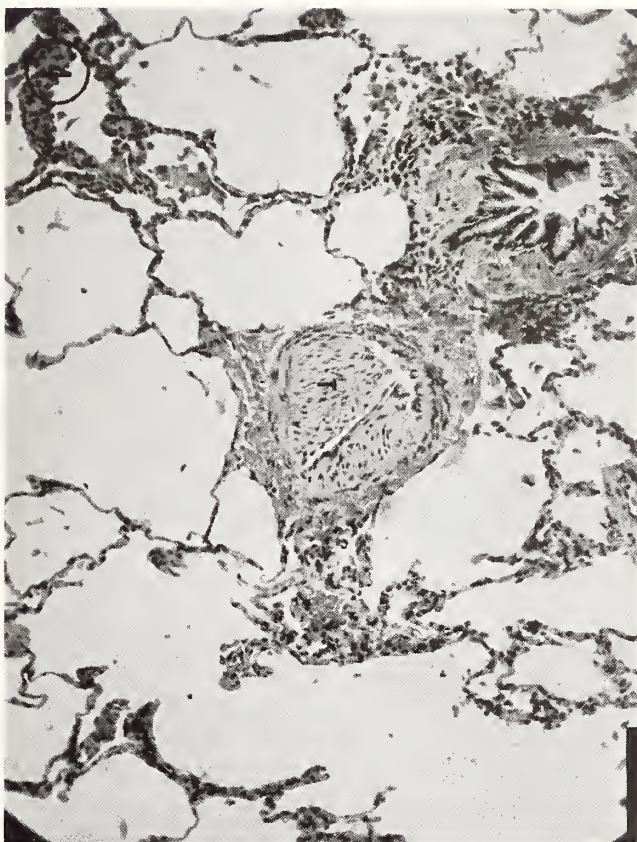


Figure 6. A focus of organized pulmonary thrombosis (T) is seen, with recanalization of the lumen.

platelet thrombus. A finding that is pertinent to this case is that segments of arteries do contain some recanalized thrombi (Figure 6). Others show well organized thrombi in which obviously the process of thrombosis occurred weeks or months prior to death, and still others show only nubbins of completely organized thrombotic material. In addition, some of the sections reveal new platelet thrombi superimposed on old thrombotic material. Such changes are particularly conspicuous in the pulmonary arterioles.

In the right lower lobe of the lung there was a very small infarct of at least two months' duration. The organized peel on the pleural surface is contiguous with the necrotic debris of the infarct. A four- to five-day-old infarct of the spleen with its associated occluding thrombus was present.

Thrombi almost totally occluded the renal arteries and produced multiple patchy areas of infarction in both kidneys (Figures 4 and 7).

The hepatic artery was occluded by a recent thrombus.

A few comments concerning hypercoagulability and the use of Enovid® are in order. Of the galaxy of factors frequently incriminated in the pathogenesis of thrombosis and embolism, in this patient it should be emphasized that there was indeed trauma with the removal of her teeth, crush injury, and postoperative state, and the use of several drugs, particularly Eno-

vid®, and the infection. It has been known for some time that with infection in postoperative states and in situations analogous to those which obtained in this patient, there are elevations of certain of the clotting factors, namely, antihemophilic globulin, Factor-VII, Factor-V, prothrombin, and fibrinogen. Perhaps of equal, or even of more importance is the fact that there is also a very definite increase in platelet adhesiveness. This was first demonstrated by Moulton in 1949.

It should be emphasized further that the so-called hypercoagulable state is not synonymous with thromboembolism. When one finds a true deficiency of one of the clotting factors, one can generally attribute the hemorrhagic disorder to it. Conversely, when there is an increase of any one or a combination of clotting factors, one cannot necessarily equate this increase with thromboembolism. A classic example of this observation is that in the last trimester of pregnancy in about 75 per cent of individuals there is an elevation of Factor-VII as well as of prothrombin. Sometimes the Factor-VII level is raised to two and even three times the normal values. It is not in this period, however, that thromboembolism is most common. Instead, it is most common following delivery. Although an elevation of certain clotting factors is referred to as a hypercoagulable state, and certainly is operating in the direction of thromboembolism, the two phenomena are not necessarily causally related.

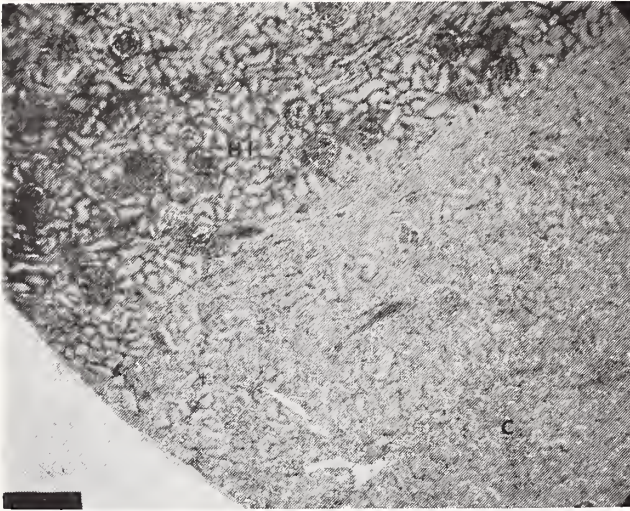


Figure 7. Section from one of the recent infarcts (HI) of the kidneys, with its inflamed border of relatively intact cortical parenchyma (C).

Coagulation studies on postmortem blood are for the most part worthless, and may be very misleading. They were not carried out on this patient.

The patient had been receiving Enovid® for five days. Conjugated estrogenic substances, unlike Enovid®, do indeed produce a very striking elevation of several clotting factors and in particular Factor-V. The use of such substances is one of the ways of producing, experimentally, a so-called hypercoagulable state in animals. Enovid®, and the hypercoagulable state, if indeed such exists, is an entirely different matter and a different order of magnitude.

Most of you remember that in September of 1962 the manufacturers called together a group of experts to determine whether or not there was a correlation between the so-called hypercoagulable state and the use of their product. At that time there had been 13 in a total of approximately 100 deaths from thromboembolic phenomena in which it was alleged that Enovid® was instrumental in producing thrombophlebitis. As one might expect, the many statisticians at this conference could not agree on a possible causal relationship. The final conclusion of the conference was that there was no statistical evidence to incriminate the drug.

The Food and Drug Administration subsequently appointed a panel of experts. This group ultimately issued a statement that there was no statistical correlation between the use of Enovid® and thromboembolism, but it did at that time warn against its use in individuals over the age of 35, presumably because some questions had been raised relative to a possible age relationship. The committee's report was published in the September 7 issue of the *Journal of the American Medical Association*, at which time the committee retracted its statement with regard to the use of Enovid® in individuals over the age of 35 and

attributed their final evaluation to a statistical error.

Blood coagulation studies carried out on patients receiving Enovid® have indicated that there are minor alterations which are of no real significance. Although two or three of the clotting factors may be slightly elevated, it is of interest that they revert to completely normal values after the patient has been on the drug for two years. It is admittedly during the early part of Enovid® therapy that patients might show a decreased clotting time, but the decrease is minimal. I think perhaps of more importance is that the one method we do have to detect true hypercoagulable states, namely a very sensitive thromboplastin generation test, indicates that approximately 80 per cent of postoperative patients, 100 per cent of patients with malignant disease, and approximately 80 per cent of individuals with thrombophlebitis do show an increased rate of thromboplastin generation. A comparable series of individuals on Enovid®, and using this same sensitive assay procedure, showed no changes whatsoever.

Why were the thromboembolic phenomena observed only on the arterial side and not on the venous side? I cannot explain this entirely. For what it may be worth, let me briefly relate the studies conducted by Dr. Shimomoto in which he has examined by electron microscopy large arteries and veins in rabbits. With the use of epinephrine, cholesterol, and thrombogenic diets he has been able to produce thrombi and ultimately atherosclerotic changes in these vessels. He has also observed a slight edema of the arteries but not of the veins. Interestingly enough, under these conditions he has observed intravascular spaces of arteries in which the spaces were arranged in a manner which suggested irrigation of the vascular wall. These spaces presumably communicate with the vasa vasora, and he postulates that thromboplastin, which can be obtained from arterial walls, but not from veins, could presumably gain access to the intravascular spaces and subsequently the general circulation. Structurally, the same type of arrangement of spaces is not present on the venous side. Furthermore, monamine oxidase inhibitors which will prevent the formation of atheromata by these various inducing agents will prevent this edematous change. One therefore might assume, with considerable speculation, that perhaps this may account for the thromboembolic phenomena on the arterial side.

This is not the first patient we have seen in this hospital with this particular set of thromboembolic phenomena, but they are unusual and admittedly the explanation for their production remains uncertain and obscure.

Dr. Delp: Thank you Dr. Carter. Are there any questions of Dr. Carter?

Dr. Hayes: You said there was an occlusion of the

descending posterior branch of the right coronary artery? Was there also infarction of the heart there?

Dr. Carter: No. There was what we could interpret to be mild ischemic changes but not a real infarct. There was right sided dilatation and perhaps slight hypertrophy.

Dr. Delp: How about the pulseless left arm?

Dr. Carter: I cannot answer this dogmatically because it was not examined. In a situation like this we have to have special permission because of embalming procedures. I would assume, however, that it was a slowly progressive thrombotic phenomenon rather than a sudden occlusion.

Dr. Delp: Dr. Carter, you would think that by the dating of these lesions that this could have started in February which would have been two months prior to her admission here at the time of her surgery?

Dr. Carter: Yes, I would think this certainly possible. One cannot state whether the Enovid® could have started a recrudescence or exaggeration of all these problems.

Dr. Delp: She did have the teeth extracted, and this I suppose added further insult. I consider this to be a very good case, and a difficult one, and I think the students did just as well as any of the staff would have done with the information they were given. It is another one of those cases in which we are pushing back the frontier just a little bit, getting a little better glimpse of some of the problems that we have.

Pathological Diagnosis

1. Idiopathic thromboembolic disease.
2. Occlusive thrombi in right pulmonary artery, branches of left pulmonary artery, distal portion of posterior descending branch of right coronary artery, splenic artery, branches of both renal arteries, distal superior mesenteric artery, right superior intercostal artery, and partial occlusive thrombus in hepatic artery.
3. Old infarct of lung, right lower lobe.
4. Multiple hemorrhages of lungs.
5. Infarct of spleen, recent.
6. Infarct of kidneys, recent, multiple, bilateral.
7. Myeloid hyperplasia of bone marrow, moderate.
8. Gingivitis with maxillary edentia.
9. Acute centrilobular congestion and necrosis of liver, moderate.
10. Terminal aspiration of vomitus, minimal.
11. Surgical absence of right ovary and right fallopian tube.

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WINTER DRIVING

Are you up on your winter driving tips?

Today's Health, the magazine of the American Medical Association, offers some pointers that may save you considerable trouble and possibly help prevent a serious accident when snow and ice and freezing rain make driving extra hazardous.

Good defrosters are essential. If yours aren't in top shape, get them fixed. Get a scraper with a blade on one end and a snow brush on the other, and keep it ready under the front seat. And keep several large rags handy for wiping windows, headlights and tail-lights.

Do your tires have good treads? Better still, use snow tires. Keep tires at full, recommended air pressure. Tire chains are useful for severe conditions. Keep a set in the trunk of your car for emergencies. Have your brakes equalized; a little difference can twist you into a skid on ice. Have muffler and tail pipes checked for leaks that might be deadly. Equip your car with a small shovel, box of sand, traction mats and tow rope for emergencies.

In a snow drift or on ice, start in second gear and power up just enough to avoid spinning the wheels. If you hit an unexpected ice patch, don't try to brake, accelerate or steer. Maintain speed and let your car "roll" through the slippery area. Steer in the direction of the skid. That is, if your car's rear end skids right, steer right. Attempts to jerk the wheel back straight will only make the skid worse.

Winter calls for plenty of stopping room. Keep a king-size interval behind the car ahead of you. Have control of your car as you approach intersections and side streets. The other driver might skid through a stop sign or red light. Pump your brakes, rather than holding them down tight.

And, no matter what the weather, buckle your seat belt tight. It might save your life.—*AMA Health and Safety Tips*.

The President's Message

DEAR DOCTOR:

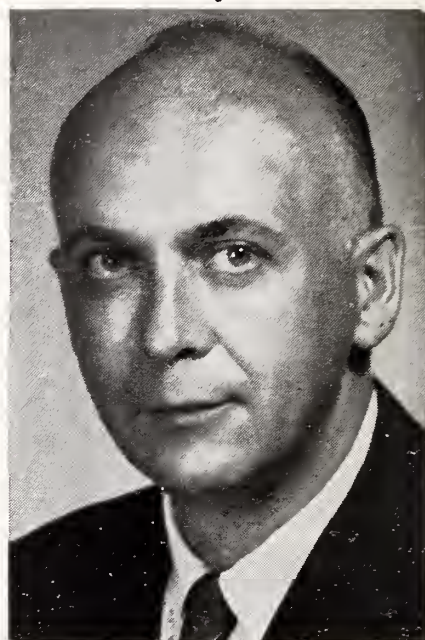
Dr. Hugh Dierker became the executive secretary of the State Board of Health and the State Health office on January 16. He comes from Flagstaff, Arizona, where he has been engaged in private general practice since 1953. Prior to this, Dr. Dierker served as chief surgeon and medical director for General Motors Corporation, Southern California Division.

Dr. Dierker has several years' experience in the county health departments of Los Angeles County in California, and Coconino County in Arizona. Dr. Dierker received his M.D. degree from Creighton University in 1937 and has served as a member of the board of directors of the Arizona Medical Association since 1964.

Dr. Dierker comes to Kansas with the support and confidence of our fine Board of Health, and in his words, "I am basically physician-oriented and am extremely desirous of working with the Medical Society to the betterment of health services in Kansas."

As you know, there could be no better time than now for a strengthening of the position of this Board and the Department of Health, with the impact of Public Law 89-749 having been recommended by the Governor to be implemented with the Board of Health as the official state agency.

We welcome him to Kansas and feel confident that our state has made an excellent choice in Dr. Dierker for the problems that lie ahead.



Very truly yours,

James H. McChesney M.D.

President

Amendments to Constitution

The Commission on Society Organization is submitting the following amendments to the constitution of the Kansas Medical Society. It is required that amendments to the constitution be published twice in the JOURNAL, therefore, the following will again be printed in the April issue.

The Commission on Society Organization is also making extensive amendments to the By-Laws and these will be submitted to the House of Delegates at the annual meeting in May.

CONSTITUTION

ARTICLE I—Title and Definition

The name of this organization is THE KANSAS MEDICAL SOCIETY. The SOCIETY is comprised of the Component Societies chartered by this organization.

ARTICLE II—Objects

The object of this SOCIETY is to unite the medical profession of the State of Kansas in promoting the science and art of medicine and protecting the health of the citizens of this State.

ARTICLE III—Component Societies

County or multi-county societies holding a charter from this organization are known as Component Societies.

ARTICLE IV—Members

THE KANSAS MEDICAL SOCIETY is composed of members of the Component Societies and others as provided in the By-Laws.

ARTICLE V—House of Delegates

The House of Delegates is the primary legislative and governing body of this SOCIETY. The members of the House of Delegates will be elected by the Component Societies as provided in the By-Laws. This body will transact the business of the SOCIETY and will elect officers except as otherwise provided in the By-Laws.

ARTICLE VI—Officers

The officers of this SOCIETY are a President, a President-Elect, a First Vice President, a Second Vice President, a Secretary, a Treasurer, a Speaker and a Vice Speaker of the House, Delegates and Alternate Delegates to the American Medical Association. The

terms of office, qualifications, and method of election shall be provided in the By-Laws.

ARTICLE VII—Council Districts and the Council

The boundaries of the Council Districts shall be specified in the By-Laws. The Council consists of one Councilor from each Council District, the officers of the SOCIETY, and advisory members as designated in the By-Laws. The Council may transact business of the SOCIETY between sessions of the House of Delegates subject to the approval of that body and as prescribed in the By-Laws.

ARTICLE VIII—Meetings

The SOCIETY will hold an annual meeting for the presentation and discussion of subjects pertaining to the science and art of medicine. The House of Delegates shall convene at the annual meeting and at other times as necessary for the transaction of the business of the SOCIETY. The place of the annual meeting shall be approved by the House of Delegates, following a recommendation of the Council.

ARTICLE IX—Funds, Dues, Assessments

Funds for the functioning of this SOCIETY shall be raised by an equal annual dues or by assessment of the Members who are subject to these charges as provided in the By-Laws. The amount of dues and assessments shall be determined by the Council and approved by the House of Delegates.

ARTICLE X—Seal

The following insignia shall be the official seal of this SOCIETY:



The official seal shall at all times remain in the custody of the Secretary.

(Continued on page 82)



Editorial COMMENT

In the *Congressional Record* dated September 26, 1966, Senator James B. Pearson has reported the results of his survey to determine to what degree medical costs have increased in Kansas. This survey was prompted by President Johnson's order to the Department of Health, Education and Welfare, and to the Department of Labor to investigate the rising costs of medical care. It was implied that these increases were due to the implementation of medicare.

Senator Pearson's inquiries dealt with three divisions of medical costs: hospitalization, doctors' fees and drugs. The following paragraphs are excerpted from his report.

Hospital costs were reported up in most instances in Kansas. However, hospitals in a few Kansas communities . . . reported little or no increase in costs in the last few months or even in the last several years. One hospital . . . reported a 66-cent-per-day decrease in costs from the past year. However, these hospitals did report that their costs, and therefore their patients' costs, would probably go up in the near future—especially in light of the recently passed minimum wage legislation.

National averages show that hospital costs have been going up at the rate of six to eight per cent per year for the last ten years. Kansas has generally followed this average increase. However, figures from the Kansas Hospital Association show a cost increase of \$3.44 per day, or nine per cent during the past year, to \$37.24 per day. This figure is still below the national average hospital cost per day, which is \$44.48. . . .

Many reasons were given by the administrators and doctors for these increasing costs. Inflation was generally listed as the most important factor. Labor costs are up. And it must be noted that labor costs amount to about 67 per cent of the total hospital costs. . . . In recent years, wages have been necessarily increased by the hospitals in order to keep the help. But it was

argued that the new minimum wage law will force this cost up far above what it is now. Once semi-skilled and unskilled hospital wage rates go up, the nursing and professional wage rates, I am told, increase in order to keep a balance between the two. . . .

Labor costs do not constitute the only increase. Food costs are also up. Wichita, Kansas, hospitals report a cost increase of 24.2 per cent this year based upon the price of 55 major food items purchased by the hospitals. . . .

. . . An increasing standard of health care is always being demanded by the public. This demand calls for better equipment and for better trained technicians. More research is required all the time. The public demands better accommodations during their hospital stay. . . . They want TV, a telephone, air conditioning, et cetera. They are unwilling to stay in a ward. They desire a private or semiprivate room. All of these things have added to the cost structure of the hospital and have increased the patient's cost while he is in the hospital.

. . . A few Kansas doctors reported no increase in fees for several years, even though overhead had been rising steadily. It might be noted that most doctors so reporting were living in smaller communities throughout the state. Most doctors did report an increase in fees within the last one, two or three years. But they report that these increases were long overdue, and that the only reason for the increase was to offset their increased expenses. . . .

The fee increase most often reported was that for an office call. Typical figures were from \$3 to \$4, or from \$4 to \$5. A few increases were reported in surgical fees. But in many instances, surgical and obstetrical fees remained as they had been for 10, 20, even 30 years. Many doctors mentioned that, with the exception of the physicians in the few metropolitan areas of Kansas, doctors had been reluctant to increase fees for

(Continued on page 82)



Personalities—IN KANSAS MEDICINE

Dean C. Chaffee was recently elected chief of staff of Memorial Hospital in Abilene. Other officers for 1967 are: J. W. Bell, vice president, and J. M. Mohler, secretary-treasurer.

The Beta Theta Pi fraternity alumni association selected David W. Robinson, Kansas City, as Beta Man of the Year at their Christmas meeting held in Kansas City. Dr. Robinson is chairman of plastic surgery and a professor of surgery at the University of Kansas School of Medicine.

Several Topeka physicians have been named to state committees of the Kansas Heart Association. The appointments, made in December, are: Norman W. Anderson, program coordinating committee; D. R. Bedford, program coordinating committee and chairman, research committee; Evalyn S. Gendel, public education committee; Dwight Lawson, professional education committee; Robert H. O'Neil and Patricia Schloesser, rheumatic fever and congenital heart disease committee.

In January, Ross Jewell, Bird City, was invited by the Satanta chamber of commerce to present a program on his experiences as a volunteer physician in Viet Nam.

The Wilson County Board of Commissioners appointed Frank A. Moorhead, Neodesha, as county health officer in January.

H. O. Marsh, Wichita, delivered an instructional course lecture on hip and knee surgery in the cerebral

palsied child at the meeting of the American Academy for Cerebral Palsy held in New Orleans in December.

The staff of Bethany Hospital, Kansas City, Kansas, elected new officers for 1967 in late December. Earl C. Sifers is the new president of the hospital staff, succeeding H. H. Hesser. Other officers are Merrill D. Athon, president-elect; William W. Abrams, vice president; and Herbert M. Nason, secretary-treasurer.

John C. Mitchell, Salina, was one of the winners of the 1966 *Medical Economics* certificate awards for outstanding articles.

After almost 60 years in the practice of medicine, H. B. Vallette, Beloit, announced his retirement, effective the first of January.

Louis N. Speer, Ottawa, was elected to active membership in the American Academy of General Practice in January.

Ronald W. Stitt was elected president of the medical staff of Providence Hospital, Kansas City, in January. Other officers elected were Louis M. Culp, president-elect and Richard A. Gruendel, secretary-treasurer. Directors of departments for 1967 will be: Arnold F. Nothnagel, surgery; Richard Ye, assistant; Robert H. Kurth, medicine; Bill Waddell, assistant; Francis J. Nash, obstetrics-gynecology; Charles Stubblefield, assistant; and Calvert J. Winter, pediatrics.

Amendments to Constitution

(Continued from page 79)

ARTICLE XI—Amendments

Amendments to this Constitution require an affirmative vote of two-thirds of the Delegates present provided the question has been introduced at the previous annual session, or upon recommendation by the Council and published twice in *THE JOURNAL OF THE KANSAS MEDICAL SOCIETY*, or submitted by the Council to each Component Society at least two (2) months in advance of the meeting.

Editorial Comment

(Continued from page 80)

many, many years because the people either could not or would not accept the increased fees. The doctors often stated that they had previously offset much of their increasing overhead by working longer hours and seeing more patients. But now they had absorbed as much additional overhead as possible—sometimes as much as 50 per cent in the last 10 to 15 years—until they were forced to increase fees.

Not one doctor felt that medicare had a direct relationship to the increased fees. A good number mentioned that it would result in increased costs to the physician because of the additional secretarial help necessary to process the paperwork for medicare patients, even in small private offices. . . .

One thing was mentioned by many doctors which might appear to be a fee increase, but which, it was claimed, really is not. Before medicare, most doctors in Kansas, as probably everywhere in our country, charged patients on the basis of their ability to pay. People who could not afford expensive medical treatment were charged reduced, or "token" fees, or many times no fee at all. However, these people who are now eligible for medicare, are now charged the standard fee because of the medicare tax and fee arrangement. . . .

. . . figures showed that overall drug costs were up slightly . . . because of the many new drugs available to the public today. However, many specific drug items which have been in use for a while have decreased in cost. A few of the smaller Kansas communities reported a general decrease in overall drug prices.

. . . responses received indicate that medical costs of all types—especially hospital costs—appear to be rising in Kansas. . . . But, as answers to my inquiries to doctors and hospital administrators in the State of Kansas tend to point out, these increases are not so great as the other cost increases our economy is experiencing today.

HOME FALLS

"Safe at home" means scoring a run and possibly winning the game to a baseball player.

The same phrase means something entirely different to the American family.

Every year we are greeted with a new set of statistics that tell us that we are by no means "safe at home" in the average household. In fact, the statistics show that home can be downright dangerous.

Accidents in the home caused 28,500 deaths in 1965, according to the *Archives of Environmental Health*, a professional journal published by the American Medical Association.

Each year about 25 million home accidents cause injuries serious enough to require medical attention or to restrict the activity of the victim a day or longer.

A host of physical factors are involved in home accidents, such as electrical and power equipment, inadequate lighting, glass doors, abandoned ice boxes, medicines, and many others. But by far the major causes of home accidents are two things—falls and fires.

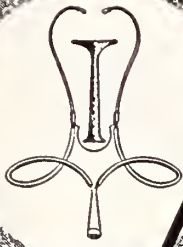
Falls are the second most common cause of accidental death, next to highway accidents. Falls in and around the home each year cause injuries to nearly 7 million people and 12,000 deaths.

Falls on stairs cause nearly 2,000 fatal injuries a year. Proper lighting and sturdy handrails on stairs are highly important to home safety. A good ladder to aid in reaching high places is much safer than standing on boxes or chairs. And the ladder should be firmly placed and braced at the foot. Spilled water or grease or improper waxing of floors cause falls. Loose rugs, scattered toys and trailing extension cords also are hazards. A light switch near the door of each room is a safety measure.

Most of these hazards can be eliminated or minimized by the head of the household.

Get your family together this evening and organize a tour of the house to check for possible "fall hazards." Then set about to correct these hazards as quickly as possible. Make your home as nearly accident-proof as possible.—*AMA Health and Safety Tips*.

Buy
U.S. Savings Bonds



Announcements

Professional meetings, conferences, and postgraduate courses of national importance are listed for the Doctor's Calendar. Notice of the session is posted in advance to allow the physician time to make preparations.

FEBRUARY

- Feb. 20-25 Annual Meeting, American Academy of Forensic Sciences, Princess Kaiulani Hotel, Honolulu. Write: Samuel R. Gerber, M.D., 2121 Adelbert Road, Cleveland 44106.
- Feb. 24 American College of Physicians, Kansas Chapter, Kansas City, Kansas. Write ACP Governor: Sloan J. Wilson, M.D., University of Kansas Medical Center, Kansas City, Kansas 66103.
- Feb. 28-Mar. 3 Winter Clinic, Colorado Medical Society, Brown Palace Hotel, Denver. Write the Colorado Medical Society, 1809 E. 18th Ave., Denver 80218.

MARCH

- Mar. 6-9 30th annual meeting, New Orleans Graduate Medical Assembly, Roosevelt Hotel, New Orleans. Write: F. H. Harris, M.D., 1430 Tulane Ave., New Orleans 70112.
- Mar. 31-Apr. 1 Cancer in Children—19th annual Midwest Cancer Conference, Lassen Hotel, Wichita. No fee or advance registration. Write: American Cancer Society, Kansas Division, Inc., 824 Tyler, Topeka 66612.

APRIL

- Apr. 10-13 38th annual scientific meeting, Aerospace Medical Association, Washington Hilton Hotel, Washington, D. C. Write: W. J. Kennard, M.D., Aerospace Medical Association, Washington National Airport, Washington, D. C. 20001.
- Apr. 10-13 American Industrial Health Conference, Americana Hotel, New York City. Write: American Industrial Health Conference, 55 E. Washington Ave., Chicago 60602.

- Apr. 12-14 Annual conference, National Society for Prevention of Blindness, Inc., Christopher Inn, Columbus, Ohio.
- Apr. 17-20 15th annual clinical meeting, American College of Obstetrics & Gynecology, Hilton Hotel, Washington, D. C.

POSTGRADUATE COURSES

University of Kansas:

- Mar. 6-8 *Pediatrics*
- Mar. 9-10 *Radiology and Radioactive Isotopes*
- Mar. 13-14 *Difficult Electrocardiographic Diagnoses*
- Apr. 3-5 *Ophthalmology*
- Apr. 5-7 *Otorhinolaryngology*
- Apr. 10-13 *Surgery*

For further information write the Department of Postgraduate Medical Education, University of Kansas School of Medicine, Rainbow Blvd. at 39th St., Kansas City, Kansas 66103.

University of Colorado:

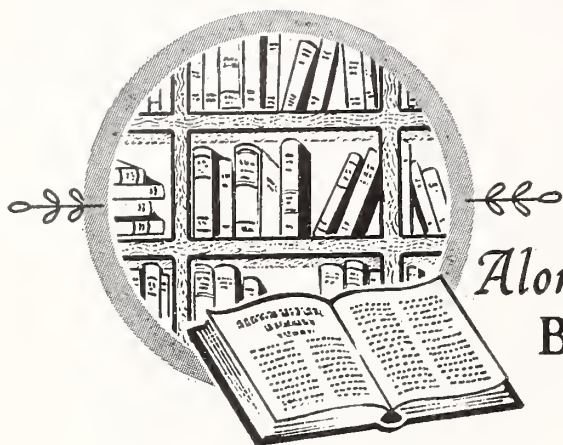
- Apr. 3-7 *Management and Care of Respiratory Insufficiency* (offered three times a year; limited to 10 registrants for each course)
- Apr. 27-29 *Clinical Dermatology* (Limited to 32)
- June 19-23 *Marriage Counseling for Physicians and Clergy* (Estes Park)

For further information, write the Office of Postgraduate Medical Education, University of Colorado School of Medicine, 4200 E. Ninth Avenue, Denver 80220.

Menorah Medical Center:

- Feb. 28-Mar. 3 *Oncology: A Curriculum on Cancer for Practicing Physicians*
- May 19-20 *Modern Trends in Medical Management*
- June 12-16 *Neurologic and Sensory Diseases*

For further information, write the Department of Postgraduate Education, Menorah Medical Center, 4949 Rockhill Road, Kansas City, Missouri 64110.



Along The BOOKSHELF

Clendening Medical Library

RECENT ACQUISITIONS

- Ackerman, Nathan Ward. Treating the troubled family. Basic, 1966.
- Annual reports in medicinal chemistry. 1965- . Academic Press.
- Association for Research in Nervous and Mental Disease. Cerebrovascular disease. . . Williams & Wilkins, 1966.
- Astrup, Christian. Functional psychoses; diagnostic and prognostic models. Thomas, 1966.
- Banforth, J. Cytological diagnosis in medical practice. 1st ed. Little, Brown, 1966.
- Biggs, Rosemary, editor. Treatment of haemophilia and other coagulation disorders. Davis, 1966.
- Bouchard, Jean. Radiation therapy of tumors and diseases of the nervous system. Lea & Febiger, 1966.
- Colman, Arnold L. Clinical examination of the jugular venous pulse. Thomas, 1966.
- Costa, Erminio, editor. Biochemistry and pharmacology of the basal ganglia. Raven Press, 1966.
- Falkner, Frank. Human development. W. B. Saunders, 1966.
- Fleming, Joan. Psychoanalytic supervision; a method of clinical teaching. Grune & Stratton, 1966.
- Foldes, Francis F., editor. Muscle relaxants. Davis, 1966.
- Gius, John Armes. Fundamentals of general surgery. 3d ed. Year Book Medical Publishers, 1966.
- Goldstein, Arnold P. Psychotherapy and the psychology of behavior change. Wiley, 1966.
- Greenblatt, Robert Benjamin, editor. Ovulation: stimulation, suppression, [and] detection. Lippincott, 1966.
- Hamby, Wallace Bernard. Carotid-cavernous fistula. Thomas, 1966.
- Heald, Felix P., editor. Adolescent gynecology. Williams & Wilkins, 1966.
- Joint Study Group of the International Federation of Gynaecology and Obstetrics and the International Confederation of Midwives. Maternity care in the world. . . 1st ed. Pergamon Press, 1966.
- Juret, Paul. Endocrine surgery in human cancers. 2d ed. Thomas, 1966.
- Kantor, Robert E. Reactive & process schizophrenia. Science and Behavior Books, 1966.
- King, Donald West, editor. Ultrastructural aspects of disease. Hoeber, 1966.
- Lerman, Sidney. Basic ophthalmology. Blakiston Division, McGraw-Hill, 1966.
- Lorr, Maurice, editor. Explorations in typing psychotics. 1st ed. Pergamon Press, 1966.
- Manager, William Muir, editor. Hormones and hypertension. Thomas, 1966.
- Mitty, William F. Surgery in the aged. . . Thomas, 1966.
- O'Neill, John Joseph. Applied audiometry. Dodd, Mead, 1966.
- Schudel, Lydia. Manual of blood morphology. 11th rev. ed. Lippincott, 1966.
- Schwarz, Gerhart Steven. Alphabetical index of roentgen diagnoses and procedures, with code numbers of the American College of Radiology. Pocket ed. Thomas, 1966.

**USE YOUR MEDICAL
LIBRARIES**

**YOUR LIBRARIAN WILL BE
HAPPY TO ASSIST YOU**



Book REVIEWS

THE HEART: ITS FUNCTIONS IN HEALTH AND DISEASE by Arthur Selzer, M.D. University of California Press, Berkeley, California, 1966. 301 pages illustrated. \$5.95.

This small and easily read book describes the heart diseases of major importance in an easy-to-understand language. It would appeal to the more intellectual-minded person who wishes to learn about heart problems.

But, it has something for the physician. Careful reading of the book should help the conscientious physician explain a heart problem in common sense words and phrases. It would improve a physician's record writing, histories and physical examinations. For example, collateral channels around an infarcted myocardium can be much more effectively described as "detours." Edema can be termed "water-logged by deposits of fluid between cells." The causes of heart failure are "chronic overloading of the heart."

So, many more ways of expression can be ferreted out and incorporated into the language we speak to our patients.—*J.E.C.*

THE OCULAR FUNDUS IN NEUROLOGIC DISEASE: A DIAGNOSTIC MANUAL AND STEREO ATLAS by William Fletcher Hoyt, M.D., and Diane Beeston, A.B. C. V. Mosby Company, St. Louis, 1966. 128 pages illustrated. \$35.

This atlas combines a succinctly written manual with colored stereo fundus photographs. It is divided into five sections: papilledema, anomalies of the disc confused with papilledema, local and systemic causes of disc swelling, pallor of the optic disc, and combined disorders of the retina and brain. The text is brief and to the point. However, the scope of the text is limited so that these basic fundamentals are

covered in detail. A stereo viewer is included so that the photographs may be studied in conjunction with the text.—*B.J.A.*

SYNOPSIS OF NEUROLOGY by Francis M. Forster, M.D. (2nd edition). C. V. Mosby Company, St. Louis, 1966. 218 pages. \$7.50.

In 200 pages, Dr. Forster has presented a synopsis of neurology that is quite complete and accurate in most all respects. It has been well planned as to its content, quite logical in its form and easy to read and understand. The newest diagnostic and treatment procedures seem to be included and even from the neurosurgical standpoint, I find very little to criticize. The index is well arranged which makes its use even more valuable for rapid reference. It was originally intended for the use of medical students, but its use should extend further than this.—*R.C.T.*

TEXTBOOK OF OBSTETRICS by John C. Ulery, M.D. and J. R. Hollenbeck, M.D. C. V. Mosby Company, St. Louis, 1965. 752 pages illustrated. \$17.50.

This is one of the better new obstetrical texts. The format for the book is different than most in that it is divided into three sections: The conduct of pregnancy, the conduct of labor and delivery, and the conduct of puerperium. All of the aspects of each of these sections are brought out successfully with a very understandable manner. The book contains the many new concepts of hormone control and use. Excellent illustrations are also present. This is an excellent book and is written in a very excellent and interesting manner. This book would be an excellent reference book for particular problems in the relationship to obstetrics.—*J.A.G.*

KANSAS STATE DEPARTMENT OF HEALTH
TOPEKA, KANSAS

Division of Preventable Diseases—Division of Vital Statistics—Kansas Morbidity Incidence
Summary of Cases Reported in October, 1966 and 1965

Diseases	October			January-October Inclusive		
	1966	1965	5-Year Median 1962-1966	1966	1965	5-Year Median 1962-1966
Amebiasis	1	1	4	12	4	25
Aseptic meningitis	—	—	—	7	3	7
Brucellosis	—	1	1	9	4	6
Diphtheria	—	—	—	—	1	—
Encephalitis, prim., infect.	6	10	6	43	40	40
Encephalitis, post-infect.	—	1	*	—	5	*
Gonorrhea	293	251	276	2669	2148	2490
Hepatitis, infectious	20	25	24	151	395	394
Meningococcal meningitis	1	—	—	15	13	13
Pertussis	—	3	—	11	23	23
Poliomyelitis	—	—	—	—	—	—
Rheumatic fever	1	2	1	1	4	3
Salmonellosis	48	49	48	237	285	253
Scarlet fever	1	4	4	91	71	91
Shigellosis	6	11	11	58	113	60
Streptococcal infections	112	132	132	1911	2476	1386
Syphilis	125	89	106	1044	745	923
Tinea capitis	4	5	5	41	55	60
Tuberculosis	21	26	20	239	221	224
Tularemia	—	2	1	—	4	4
Typhoid fever	1	—	—	7	—	2

* Statistics for 5-year median not available.

TUBERCULIN SKIN TESTING PROGRAM
IN SCHOOLS

There has been some confusion concerning the recommendations regarding which grades should be tuberculin tested in the schools.

The recommendations of the Surgeon General of the United States Public Health Service, the Task Force on Tuberculosis Control, and the Kansas State Board of Health are as follows:

- 1. All school enterers (kindergarten or first grade). (Most of these are tuberculin tested prior to school entry as required by Kansas statutes.)
- 2. All ninth graders.
- 3. Transfer students from out-of-state schools.

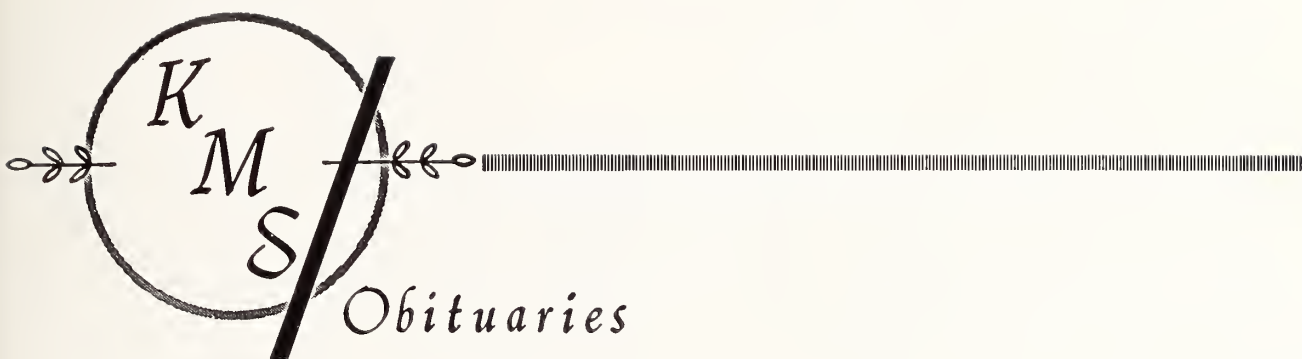
Tuberculin testing of these three groups should be done *annually*, with complete medical and epidemiological follow-up of all positive reactors and their close associates. (This includes parents, siblings,

grandparents and other close relatives, regular babysitters in past years, and close family friends or frequent visitors in the home.) Tuberculin testing of children in other grades should be attempted only if complete epidemiological follow-up can be achieved.

NEW MEMBERS

The JOURNAL takes this opportunity to welcome these new members into the Kansas Medical Society.

- | | |
|---|--|
| Gordon T. Cowles, M.D.
3333 E. Central, Suite 704
Wichita, Kansas 67208 | Elmer S. Kardatzke, M.D.
1301 N. West Street
Wichita, Kansas 67203 |
| Manis C. Edwards, M.D.
3333 E. Central, Suite 704
Wichita, Kansas 67208 | Albert W. Shiflet, M.D.
841 N. Broadway
Wichita, Kansas 67214 |



JOHN P. BERGER, M.D.

John P. Berger, Wichita, died on December 24, 1966, at the age of 54.

Dr. Berger was born in Detroit, Michigan, on December 28, 1912. He graduated from the University of Michigan School of Medicine in 1939. After postgraduate study at Columbia University, he served as an instructor in the Department of Dermatology and Syphilology at the University of Michigan medical school and moved to Wichita in 1944.

He was a member of several professional organizations and a past president of the Kansas Division of the American Cancer Society.

EDWIN N. ROBERTSON, M.D.

Edwin N. Robertson, 88, died at St. Joseph Hospital in Concordia on December 28, 1966.

Dr. Robertson was born on August 3, 1878, in Toledo, Ohio. He was graduated from the University of Nebraska School of Medicine in 1906. He came to Concordia in 1908 and practiced there until illness forced him to retire shortly before his death. He was certified by the American Board of Ophthalmology in 1921 and became a member of the American College of Surgeons in 1924. In 1928, Dr. Robertson went to Europe to study at the University of Vienna, returning to Concordia after completion of his postgraduate course. He was a member of professional and civic organizations and served on the staff of St. Joseph Hospital for many years.

Surviving Dr. Robertson are his wife, two sons and a daughter.

HUMAH H. WILSON, M.D.

Humah H. Wilson, 78, Wichita, died on November 18, 1966, after a long illness.

Dr. Wilson was born at Edmonson, Arkansas, on October 16, 1888. He received his degree in medicine from the Shaw University School of Medicine, Raleigh, North Carolina, in 1910. He came to Wichita in 1911 and continued his medical practice there until his retirement.

He is survived by his wife.

The Kansas Medical Society—1966-1967

OFFICERS

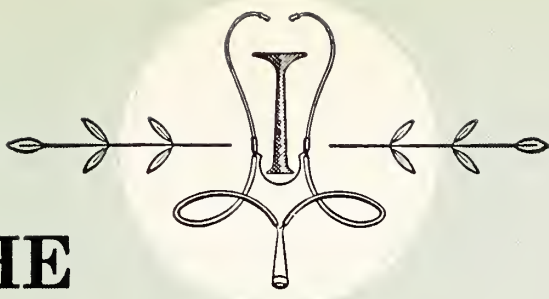
President.....	James A. McClure, Topeka
Immediate Past President.....	George E. Burket, Jr., Kingman
President-Elect.....	George F. Gsell, Wichita
First Vice-President.....	John L. Morgan, Emporia
Second Vice-President.....	Leland Speer, Kansas City
Secretary.....	Francis T. Collins, Topeka
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A.M.A. Delegate.....	John C. Mitchell, Salina
A.M.A. Delegate.....	Lucien R. Pyle, Topeka
A.M.A. Alternate.....	William J. Reals, Wichita
A.M.A. Alternate.....	J. Warren Manley, Kansas City
Chairman of Editorial Board...	Orville R. Clark, Topeka

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District 2.....	James G. Lee, Jr., Kansas City
District 3.....	Dan L. Berger, Shawnee Mission
District 4.....	Wm. G. Rinehart, Pittsburg
District 5.....	Alex Scott, Junction City
District 6.....	Robert C. Lawson, Topeka
District 7.....	Richard F. Conard, Emporia
District 8.....	Bruce G. Smith, Arkansas City
District 9.....	S. C. McCrae, Salina
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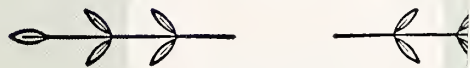
OFFICERS OF COMPONENT SOCIETIES—1967

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Allen.....	George F. DeTar, Iola.....	Eugene Myers, Iola
Anderson.....	Thomas M. Dougherty, Garnett.....	Claib B. Harris, Garnett
Atchison.....	Charles S. Brady, Atchison.....	Iva R. Morrison, Atchison
Barton.....	Robert Moore, Hoisington.....	Findley Law, Ellinwood
Bourbon.....	Dean T. Gettler, Fort Scott.....	Patrick E. McCann, Fort Scott
Butler.....	Charles I. Girod, El Dorado.....	Kenneth B. Dellett, El Dorado
Central Kansas.....	Vale O. Page, Plainville.....	Victor M. Eddy, Hays
Chautauqua.....	I. Claire Hayes, Cedar Vale.....	William K. Walker, Sedan
Cherokee.....	Forrest H. Jones, Columbus.....	George Belcher, Columbus
Clay.....	Carl H. Ruff, Clay Center.....	Severt A. Anderson, Clay Center
Cloud.....	Yong W. Kim, Concordia.....	Avis Bray, Concordia
Cowley.....	Joseph H. Depoe, Winfield.....	James N. Winblad, Winfield
Crawford.....	Maurice F. Stock, Pittsburg.....	John G. Esch, Pittsburg
Dickinson.....	J. O. Gilliland, Herington.....	Dennis Richards, Herington
Douglas.....	Ray A. Clark, Lawrence.....	Dale L. Clinton, Lawrence
Edwards.....	Rene E. Schnoebelen, Kinsley.....	M. Dale Atwood, Kinsley
Finney.....	C. E. Petterson, Syracuse.....	H. M. Wiley, Garden City
Flint Hills.....	Edward J. Ryan, Emporia.....	Gould C. Garcia, Emporia
Ford.....	Robert D. Boles, Dodge City.....	Clair M. Alderson, Dodge City
Franklin.....	Chester H. Strehlow, Ottawa.....	Louis N. Speer, Ottawa
Geary.....	Charles V. Minnick, Junction City.....	Herbert L. Bunker, Jr., Junction City
Greenwood.....	Cecil D. Baird, Eureka.....	Virgil C. Hollenbeck, Eureka
Harvey.....	Erwin T. Olson, Newton.....	Dale G. Griswold, Newton
Iroquois.....	Robert M. Daugherty, Meade.....	Jerry H. McNickle, Ashland
Jackson.....	James C. Seeley, Holton.....	M. Ross Moser, Holton
Jefferson.....	W. A. Madison, Nortonville.....	C. P. Arnold, Valley Falls
Johnson.....	William R. Brown, Shawnee Mission.....	Terry R. Dennison, Shawnee Mission
Labette.....	Evert C. Beaty, Parsons.....	Guy W. Cramer, Parsons
Leavenworth.....	Kenneth L. Graham, Leavenworth.....	Andres Grisolia, Leavenworth
McPherson.....	Vaughn C. Price, McPherson.....	Arthur H. Dyck, McPherson
Marion.....	Abraham C. Eitzen, Hillsboro.....	G. George Ens, Hillsboro
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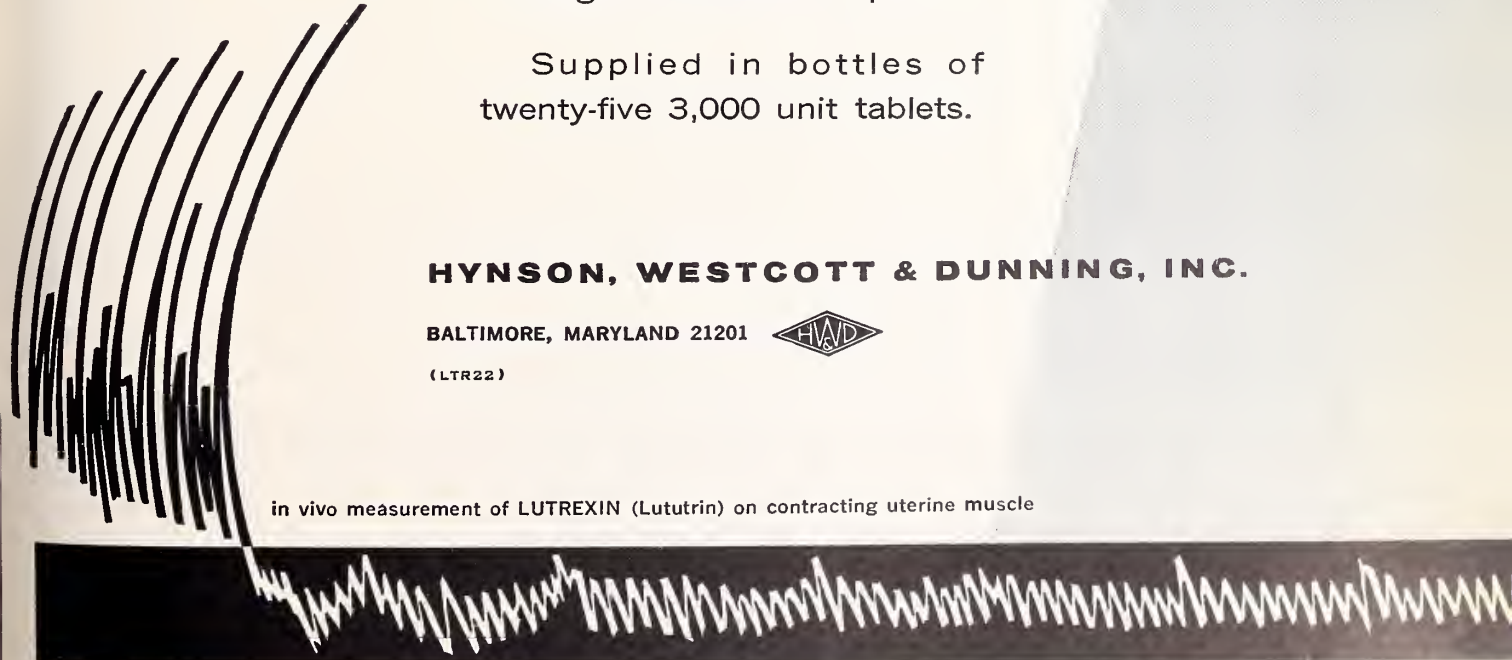
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The JOURNAL of the KANSAS MEDICAL SOCIETY

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Managing Editor and Advertising Manager: Mary Rogers, 315 West Fourth Street, Topeka 66603.

Business Manager: Oliver E. Ebel, 315 West Fourth Street, Topeka 66603.

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21st Annual University of Kansas School of Medicine Issue

It is heartening to learn that the JOURNAL OF THE KANSAS MEDICAL SOCIETY devotes one issue a year to the University of Kansas Medical Center. That individual faculty members may earn space in the JOURNAL at other times of the year is recognized but this issue is devoted to the University of Kansas Medical Center to do with it what it will. It is a challenge perhaps, an opportunity, of course, but as a symbol of good will shared by the school and doctors of the state this issue each year is unique. This is my first chance to share an experience enjoyed by Franklin Murphy, Clarke Wescoe, and Arden Miller. This experience I appreciate not only to become part of a tradition but more importantly to express certain beliefs.

My cherished profession (I can honestly say if I had to do it over, I would do the same and I suspect you share my feelings) is being tested in ways which we do not relish. Yet our past performance can stand the test and our future accomplishments will stand the test. Our methods of operation are and should be open to the closest of scrutiny and some we can and will change. Our objectives which we have inherited and will pass on unchanged remain clear and true. Do not, I beg of you, let pressures from those who challenge our methods alter our objectives. Do, I beg of you, examine our methods of achieving our objectives and let us change as we see the need and hold fast when we must. Our objectives, yours and ours as solo practitioners, participants in group practices, teachers, researchers, specialists, general practitioners, doers, thinkers, organization men, and lone operators are one.

George A. Wolf, Jr., M.D.



TV Microwave System

The KUMC Television Link to the University of Kansas

ROBERT H. GEERTSMA, Ph.D.,* *Kansas City, Kansas*

Background

FOR MANY YEARS the University of Kansas School of Medicine (KUMC) curriculum was divided between the University of Kansas (KU) at Lawrence and clinical facilities located on the Kansas City campus. Medical students spent the first two years of their medical studies in basic science work at KU and then obtained their clinical training in Kansas City. In 1961-1962 new buildings were constructed on the Kansas City campus and the basic medical science departments moved from Lawrence to this new facility. This move unified the medical curriculum by enabling medical students to spend all four years of medical school on the Kansas City campus. The KUMC student population was further augmented by graduate students in the basic medical sciences transferring with their departments to the medical campus. As space, facilities, and training activities expanded on the medical campus, the health-related sciences evidenced similar steady growth, with actively developing programs in Nursing Education, the Children's Rehabilitation Unit, Physical and Occupational Therapy, and Medical Technology. The combined activity of these programs to train graduate students and the entire spectrum of health science related workers, as well as to provide continuing education

for all of the biomedical professions resulted in an educational enterprise presenting manifold needs and requirements. And with the recent and anticipated

The University of Kansas Medical Center and its parent institution, the University of Kansas at Lawrence, have recently been linked by a two-way television microwave system. Because this system may serve as a prototype for similar installations elsewhere, it seems useful to describe what it consists of and to outline some of the problems and possibilities it presents to the institutions, the students and the citizens of the state. These thoughts represent a prospectus rather than a plan or a policy. They are conceptual guidelines and suggestions offered from the viewpoint of the emerging field of health sciences communication. We expect that they will require test, modification and improvement, for such is the way of progress.

federal health care legislation, this growth is likely to be only a beginning.

The expansion of training programs and increase in students poses problems in the breadth and diver-

* Chairman, Department of Medical Communication, University of Kansas School of Medicine.

sity of courses and other educational programs and materials which may be made available to students on the Kansas City campus. Increasingly, as KUMC programs grow in numbers and diversity, KUMC students must avail themselves of instructors and courses located at KU. And, contrariwise, the growth of the medical center insures that its faculty, clinical and research resources will be in greater demand from the KU campus. These circumstances led to consideration of a television link between the two campuses which might draw closer together and provide some integration of their educational programs and activities.

In the spring of 1964, a grant from the National Fund for Medical Education made it possible to plan the establishment of a microwave system connecting the Medical Center with its parent campus. After careful investigation of microwave systems and their suppliers, a contract was negotiated with the Lenkurt Electric Company. The system is now complete and some experience has been gained in its operation.

System Characteristics

The microwave system connects the University of Kansas Medical Center with the University of Kansas campus at Lawrence. Transmission is licensed in the 11,000 MHz business-radio band as assigned by the F.C.C. A 25-foot mast on F Building at KUMC supports a parabolic antenna which sends and receives signals from a 250-foot guyed tower located near Bonner Springs, Kansas. From this intermediate location, signals are sent and received from a reflector located on a 150-foot self-supporting tower behind Marvin Hall at KU. The microwave radio equipment is of latest design and is completely transistorized except for klystron tubes. It is capable of virtually undistorted signal transmission. Supporting CCTV equipment includes Diamond STV-2 Viewfinder high resolution cameras and camera control units with 10 to 1 Zoom lenses, Conrac 24" monitors, dolly-tripod-cradle head supports, waveform monitors, preamplifier-mixers, and clamping-equalization amplifiers. At KUMC, the equipment and facilities of the Department of Medical Communication provide supplementary resources.

Several features make this microwave system distinctive, (1) transmission in the 11,000 MHz band, (2) two-way simultaneous audio-video, (3) high resolution video transmission, and (4) communication between a medical school and its parent campus. Let us consider these aspects in some detail.

High Frequency Transmission—Virtually all educational broadcasting via microwave operates either in the 6,000 MHz band or at even lower frequencies. Our use of the higher frequency range will provide some test of both the radio equipment and the system

engineering. The system reliability under various weather conditions should prove especially interesting to other potential microwave users who find themselves similarly located in the 11,000 MHz band by invitation of the F.C.C.

Two-Way Simultaneous Audio-Video—Two-way simultaneous television has been used in numerous locations in educational and other settings. However, our system may be distinctive in its use of this system to link a medical school and its university campus. The closest and perhaps best known system operating in this fashion connects the Nebraska Psychiatric Institute with a state hospital some 90 miles distant. The programming of the Nebraska system follows the purposes and practices of a psychiatric institute and thus is more specialized in its operational characteristics than our system is likely to be. We should have considerably more scope for demonstrating the possibilities of two-way simultaneous transmission within an institution of higher learning and an associated complex of professional-graduate schools.

High Resolution Video Transmission—Television camera and monitors for the microwave system utilize high resolution video systems (800 line, 675 scan rate). The microwave video transmission band width is 7.5 MHz, thus permitting the transmission of higher resolution pictures from one end of the system to the other than is usually the case. This band width is two MHz more than that provided by most microwave systems, and may be the only one of this type presently in operation for educational purposes. In operational terms, these characteristics of the system should lead to clearer, sharper pictures, permitting better visualization of structure so often necessary in biomedical applications.

Medical School to Parent Campus Link—Although a number of medical schools are separated by a substantial distance from their parent campuses, ours may be the first to establish and explore this type of microwave television communication link between the two. Other medical schools located within their parent campus have television line connections throughout the campus, but this situation is considerably different from distant location in separate cities. For this reason, both the engineering and operational aspects of our system may be of interest to other universities.

Operation and Programing

The operation and programing of the intercampus microwave system over the initial phase of its development provides a challenge and an opportunity both to explore the limits of its usefulness and to investigate the environmental, educational and psychological conditions of its use. The initial approach to the system should be directed toward two crucial factors

in its operation, the environmental-social system on each campus which will determine the use of the microwave link as an educational and communication tool, and the structure of the microwave system operated as a television facility. Separate consideration is given below to each of these factors.

Present Capability—The operation of the microwave system between the two campuses utilizes a basic complement of cameras and monitors which may be expected to increase as use of the system increases. Three sites on each campus have been connected by cable to the microwave transmitters and receivers. Other locations on either end of the system will be cabled into the system in the future as need requires. The system cameras and monitors at the Medical Center are transported to any one of the reception-transmission areas for program use. This takes advantage of the relatively short distances between locations on the Medical Center campus to minimize equipment duplication. At KU some duplication seems necessary. Consequently, we have planned to transport the television camera, camera cable, and setup monitor between locations. Dollies and tripods, audio preamplifiers, and monitors will be duplicated at the various sites. Initially, and as a temporary measure, graduate assistants in Radio and TV will handle the technical and camera work on the University of Kansas side of the system. Members of the Television and Electronics Division of the Department of Medical Communication man the Medical Center operation and look after the repeater station at Bonner Springs.

Intercampus Communication—It is obvious that successful use of the microwave system requires fulfilling specific needs that exist on the two campuses. Thus, it seems appropriate to direct some initial attention to the discovery in systematic fashion of inter-campus communication needs so that these may be evaluated for their feasibility and appropriate mode of implementation through the microwave system. Program types, such as formal courses, special lectures, etc., can be anticipated but the most useful content and subject matter is open to empirical determination. Accordingly, it seems highly desirable to establish some channel for communication and discussion among the faculty of each campus. For this reason it has been proposed that an intersystem committee be constituted which would represent the training and educational programs on each campus. The committee would be advisory to an intercampus coordinator and would serve as a means of communication reaching into all of the university programs. The intersystem coordinator would have direct supervisory and operating responsibility for microwave television activities and personnel both at KU and KUMC. Through the intercampus committee he would system-

atically collect information regarding administrative and faculty needs relevant to programing.

It should be useful initially to set up operating guidelines for the presentation of different program types, and then to investigate in systematic fashion the various parameters of system use. The following experimental plan is organized in terms of program types. The programing will expand and shift to accommodate other areas and activities as suggested by the committee.

Our experience to date in operating the microwave system suggests the strong desirability of the following guidelines.

- (1) Major emphasis should be placed on full-time, technically competent operating personnel. A microwave system serving to transmit credit courses and such similarly important programs must be operated in professional, reliable, full-time fashion. To do otherwise is to estrange the system from its potential users.
- (2) Operating personnel on both sides of the system should be controlled by the person who is also responsible for programing the system. This is strongly desirable in order to provide flexibility of programing and coordinated operation.
- (3) All operating personnel should have their first responsibility to the system, under any conditions that may exist. Otherwise, at times such personnel simply will not be available when needed and there is no explanation sufficient to counteract operational failure.
- (4) A general-purpose classroom should be set aside on each end of the system for exclusive use of the system. Speakers, instructors and students would then come to this television classroom for participation in programs. This eliminates the manifold and sometimes insurmountable problems in scheduling two rooms for each program. Further advantages involve being able to leave equipment at such locations, which is desirable both from the point of view of keeping the equipment in running condition and for reasons of security. Special programs requiring transportation of equipment to other areas of either campus would not be precluded by this arrangement, but would be facilitated by the need to do less traveling on a routine basis.
- (5) Provision should be made for voice communication between the director of the system and all operating personnel on both ends. Agreement on schedules, equipment to be used, troubleshooting, etc. all require continuing communication. This is being done with the installation of a separate voice channel through the microwave carrier. It can also be used for cameraman to

cameraman voice communication during programs.

- (6) Provision should be made for exercising the responsibilities of the registrar's office and the graduate school as the system is used to present credit offerings. Questions which arise during such courses are most likely to involve registration, change of registration, examination administration and feedback, official university decisions influencing the progress of the course, and payment of fees. These functions should probably be discharged through the graduate school office on the KUMC campus. They would presumably require some specific assignment of these responsibilities in order to insure that they are carried out. We have noted that the instructor, distant on the KU campus, is less in control of the mechanics of the course operation as these affect students at KUMC. For this reason, it would also seem desirable that each instructor have a graduate teaching assistant on the remote end of the system to provide direct liaison with the students.

Programing—There follows a prospectus of program types discussed from an innovative point of view.

- (1) FORMAL COURSES: For courses which originate on the KU campus and are taken by students on the KUMC campus, it must be recognized that the distant students are, in a real sense, cut off from the environment which the instructor and his classroom students share at KU. Rather than to attempt to ignore this difference, an experimental program might be developed in which the remoteness of the KUMC students is dealt with by an effort to construct an advantageous learning milieu which is different from that at KU. This can be done by stressing the following. Students are encouraged to view the course as an exercise in independent study. Basic core materials pertinent to the course content and especially suited to independent study are provided and use by the students encouraged. The remoteness of students from the instructor is presented as a group problem so that the students may undertake to actualize the goals of the course in concerted fashion, even though this differs from what would be the case in an actual live course situation. Discussions among students are stressed, as is preparation for the actual class sessions when students have an opportunity to query and communicate with the instructor.

A study should be elaborated to assess remote and classroom students' perceptions of their instructor in a microwave televised course. The technique of Q-sorting could be used to quantify

such perceptions. Students' actual perceptions of their instructor could be related to their notions of an ideal instructor and assessed in terms of possible changes throughout the span of the course. Consistent or significant differences in such perceptions between remote and classroom students should provide important information on the instructors' role in teaching via the microwave system and how this role differs as it relates to his classroom and his microwave "presence." Information of this type is sorely needed in order to establish sound basis for innovations and changes in program techniques for formal course presentations.

There is some possibility that remote students in courses may be affected significantly by the novelty of the experience such that, in addition to content learning, they learn something about themselves as learners and their adjustment to different and new forms of learning experiences. This question should be explored for the help that it may provide in understanding the strengths and weaknesses of microwave courses relative to the experiences of students with this medium. Students who adapt well to such remote instruction may be better disposed toward learning from even more automated conditions such as programed instructional systems. Some prediction of which students would be most comfortable and can profit most from televised courses might be possible as a result of such knowledge.

The efficiency of microwave televised courses can be assessed in general terms. Procedural modifications can be explored, such as the technique of having graduate assistants at the remote end of the system, the question of whether or not it is advantageous to have students in the actual classroom with the instructor, the advantage of videotaping lectures and permitting remote students to review these at times of their own choosing, the question of whether the remote students should at some time during the course have face-to-face contact with the instructor, and the question of whether the two-way simultaneous system offers significant advantage over a one-way lecture system—all of these parameters and problems should be systematically investigated with formal experimental design.

- (2) SPECIAL SPEAKERS: Programing technique in these cases should be varied in order to find a generally cogent pattern. For example, someone from the audience at the remote end may, at the beginning of the lecture, introduce himself and the remote audience, either collectively or individually, to the speaker. Questions may be

asked the speaker prior to his talk, or other variations introduced to try to bring the speaker and his distant audience closer together in psychological distance.

- (3) **SEMINARS INVOLVING STUDENTS FROM BOTH CAMPUSES:** The Medical School offers its students electives and elective time which might profitably be occupied in some cases with intercampus seminars. For example, medical and law students might meet, each group on its respective campus, through the medium of the microwave link in order to discuss common problems and interactions among the two professions. Medical and legal practitioners often interact in the course of their professional careers and it seems desirable to establish early in the training of each some appreciation of the perspective and the problems of the other. The results of this type of seminar can themselves be studied with a Q-sort or rating technique in order to identify changes in perception of professional self and the other professional self over the course of the seminar meetings. In this fashion, students' attitudes toward themselves and their own profession and the other profession might be looked at as a dependent variable affected by such interprofessional discussion and contact.

In similar fashion to the above, other seminars might be elaborated to include medical students and graduate students in the behavioral sciences. The general objective for such seminar discussions could be phrased as an enlargement in the appreciation and understanding of students who have made a vocational commitment. This paradigm could also be followed in interactions between vocationally committed students, such as medical students, and uncommitted students, such as undergraduate college students. In this latter case, changes in the vocational perspectives of the uncommitted students would provide an attractive field for study.

- (4) **INTERFACULTY DISCUSSIONS AND SEMINARS:** These programs fall naturally into two types. The first encompasses administrative business such as might be involved with members of a university committee from each campus meeting via the microwave link, or the business of the academic Senate being brought directly to the Medical Center for the ready participation of KUMC faculty who are members of the Senate but are not able personally to be present at meetings. The second type involves members of the faculty of each campus sitting together to discuss matters of mutual concern and interest. For example, the chairman of the Medical Center clinical departments might meet with the chair-

man of departments in the behavioral sciences to explore and discuss problems and areas of interaction and common concern. The faculties of these departments might be looking on as unseen audience at each end of the system. Such conferences and discussions could result in cooperative research, teaching or training projects, which because of lack of initial contact, might otherwise never come to be.

It would seem advantageous to offer a regular intercampus lecture program alternating faculty lecturers from KU and KUMC. The intercampus committee would recommend lecturers from each campus whose subject would be of particular interest to members of the other campus. In this fashion, KU and KUMC faculty would become better known to their distant colleagues.

- (5) **SPECIAL PROGRAMS:** These programs would be specially contrived in order to yield investigative information pertinent to the operation and expansion of the system itself. For example, in view of the eventual desirability of expanding and lengthening the microwave facility in order to accommodate postgraduate medical education programs, some pilot work in arranging and operating such programs would be extremely useful. A postgraduate program from the KUMC campus could be televised, in part or in whole, to a group of enrolled physicians present on the KU campus. CPC, trauma, and grand rounds conferences might be similarly treated on a pilot basis in order to gain experience with these types of presentations that will be useful in future years.
- (6) **EXTENSION COURSES:** A trial program of several evening courses for students at KUMC should be planned to originate from KU. These might be part of the Extension Division's program to expand its adult education program. If such programming were done in evening hours, the microwave system might be extensively used. In any case, courses could be initially offered through the system as a means of assessing and stimulating demand. Those courses attracting more than a given number of enrollees might justify having an instructor travel from KU, whereas smaller classes could be kept on CCTV.

System Development and Expansion

With the experience gained from the intercampus microwave television system and the facilities and personnel assembled to support its operation, it should shortly be highly desirable to arrange for expansion of the system by its extension to other cities in the state. Such connections, which ultimately may be the backbone of a considerably more complex

skeleton of microwave communication, would serve purposes of continuing education in the health sciences, inter-institutional cooperative teaching and research programs, and augmentation and coordination of regional health services. Each of these types of activities deserves comment.

Continuing Health Education—Health education is, of course, a major function of the Medical Center, with the continuing education of physicians and other members of the health services team vigorously served through the efforts of the Department of Postgraduate Medical Education. The continuing health education program is regional in concept and it is highly desirable that delivery systems for these programs make use of the flexible and powerful television medium. Continuing education centers established at certain key points in the state could attract neighboring health science workers and might provide strike-off points for omnidirectional through-the-air or cabled distribution of signals originating at KUMC. The program content of such a system is close at hand. The various postgraduate programs which run throughout the year might be wholly or in part transmitted to distant viewers, permitting them the opportunity of direct interaction with instructors in Kansas City. Both clinical and basic science conferences offer another area of interest to health science workers. CPC, trauma conference, and assorted Grand Rounds provide a good start toward a comprehensive program that should eventually include all of the clinical departments and areas. Another type of activity which bears promise and might be investigated involves group case conferences in which clinicians at KUMC and a distant location deal with real problems of diagnosis and management. Patients could be interviewed through the microwave system and even given some form of remote physical examination. Instruction, support and supervision of nursing personnel working in the region could be offered from KUMC through this medium.

It would prove useful and feasible to study through the operation of the above outlined continuing education programs, the processes of communication, diffusion, and trial of innovations in the diagnosis and treatment of patients. For example, in conjunction with the conferences put on by the clinical pharmacology unit at KUMC, a supporting program of investigation might assess the fate of information so communicated to a subgroup of practitioners in the region.

Cooperative Inter-Institutional Research and Training—A model for this development could be established using the cooperative research and teaching program which involves the Bureau of Child Research at KU, the Children's Rehabilitation Unit at KUMC, and Parsons State Hospital. A television connection

between these three institutions would serve their collaborative purposes with most significant effect. The contribution of staff at the three institutions could be used to maximal advantage both in ongoing programs and in the elaboration of new work. A television system linking state institutions of higher learning would present interesting possibilities for the participation of KUMC. Because the various teaching and training programs of KUMC, including those of medicine, nursing, medical technology, physical therapy, etc. draw heavily from the state university system, it should serve these programs if orientation and course material were able to be transmitted from KUMC faculty and staff directly to students in outlying institutions. The course material so handled would also be given the benefit of being taught by KUMC staff. In the more distant future it is attractive to think about the possibility of such course material reaching into the secondary school systems throughout the state in order to enrich their programs in biomedical science fields.

Augmentation and Enrichment of Regional Health Services—The state hospital system offers another attractive field for expansion of the microwave communication system. Interconnected in this fashion, our state institutions would gain certain unique advantages. In general terms, staffs of the institutions would be able to interact directly on behalf of service work, research and training programs. Thus staff would be shared for teaching, for supervision of trainees, and for case conferences. These activities would bring the best teaching and training professionals within the system to the programs of all the institutions and thus make the widest use of scarce medical, psychiatric, nursing and behavioral science talent. Also, outside consultants to all the institutions could be shared, thus increasing the consultant program hospital-fold. Inter-institutional training and research programs could be planned and carried out with relative ease. It is worth noting that the staffs of outlying hospitals would be offered many advantages of professional communication and collaboration not now available to them, so that some advantage could be expected in the areas of staff recruitment and job satisfaction, other things being equal. The functional hub of this system would be KUMC because of its concentration of professional talent and resources. The federation of state hospitals with KUMC in a broad range of training programs would be facilitated because of the increased possibilities of intensive supervision of trainees through the medium of the microwave connection. The benefit from such a system might be identified in its strengthening and increasing the productivity of our state programs of training health care personnel; ultimately, the patient will be better served in his health needs.

Streptococcal Infections

Throat Cultures for the Diagnosis of Streptococcal Infections: Report of a Survey in Kansas

RAY E. ALLEN, M.D.,* ANTONI M. DIEHL, M.D.,† Kansas City, Kansas,
and NORMAN W. ANDERSON, M.D.,‡ Topeka

STREPTOCOCCAL INFECTIONS present a challenging diagnostic problem to the practicing physician. Clinical recognition of streptococcal illness is difficult even when signs and symptoms typical of this disease are present.¹ Of additional concern is the fact that nearly half of all streptococcal infections masquerade as non-specific, upper respiratory tract infections. In these atypical cases, the sudden onset of sore throat with pain on swallowing, headache and fever may be absent. The observation of a severely red throat with or without tonsillar exudate, and tender, swollen cervical nodes may not be present. When atypical symptoms and signs of streptococcal disease exist the physician must rely upon the bacteriology laboratory to confirm his clinical impression.

Accurate diagnosis as to etiology is important since untreated streptococcal infections may be followed by acute rheumatic fever or acute nephritis. In epidemic situations approximately three per cent of confirmed, untreated, group A beta hemolytic streptococcal infections will be complicated by rheumatic fever.^{2, 3} This attack rate can be reduced to 0.2 per cent if such infections are properly treated early in the course of illness.⁴ Prevention of acute rheumatic fever is possible only if all upper respiratory tract infections are considered to be of streptococcal origin until bacteriologically proven negative for this organism. Elimination of the streptococcus from the respiratory tract with appropriate antimicrobial therapy for ten days is the presently approved method available to prevent the nonsuppurative complication of rheumatic fever.

The need for laboratory confirmation of streptococcal infections has been recognized throughout the country. In some states, the use of public health

laboratories has been advocated for this purpose. Realizing the necessity for physician support, an alternate approach was proposed in the state of Kansas whereby utilization of existing laboratory facilities was considered to be a practical solution. In 1963 the Kansas Medical Society, the Kansas Society of Pa-

The present report describes a program initiated cooperatively by the Kansas Medical Society, the Kansas Society of Pathologists, the Kansas Heart Association, and the Kansas State Department of Health. This program was designed to stimulate an increase in the number of throat cultures performed on patients with upper respiratory infections in the state of Kansas; and was considered an important step toward the further reduction of the incidence of acute rheumatic fever and rheumatic heart disease.

thologists, the Kansas Heart Association, and the Kansas State Department of Health cooperatively instigated a program to stimulate more interest in the procurement of throat cultures taken in the state. The present report summarizes the effectiveness of this program.

Materials and Methods

All laboratories known to be performing throat cultures in the state of Kansas were contacted. These laboratories were classified according to the method of their financial support (*Table 1*). Hospital laboratories accounted for more than half of the participating facilities. In May of 1963, a questionnaire with the following queries was sent to all laboratory directors with 100 per cent reply:

- (1) Does your laboratory process throat cultures?
- (2) If so, how many were processed in 1962?

* U.S.P.H.S., Heart Disease Control Program Assignee to the Kansas State Department of Health, Topeka, Kansas. Dr. Allen is now a resident in medicine, University of Kansas Medical Center.

† Associate Professor of Pediatrics, and Director, Section of Pediatric Cardiology, University of Kansas School of Medicine.

‡ Director of Medical Care Division, Kansas State Department of Health, Topeka, Kansas.

TABLE 1

NUMBER OF PRIVATE AND GOVERNMENT
LABORATORIES INVOLVED IN STUDY
BY TYPE OF LABORATORY
KANSAS, 1963

Private	89
Independent laboratories	19
Hospital laboratories	60
Clinical laboratories	10
Government	11
State or county health department laboratories	2
Medical school laboratory	1
Army hospital	2
Veterans hospital laboratory	3
Air Force hospital laboratory	3
Total laboratories in Kansas	100

- (3) How many of the throat cultures were positive for beta hemolytic streptococci in 1962?
- (4) Are these figures from actual records or did you estimate them?

Kits containing a strip of filter paper, a dacron-tipped swab and a tongue depressor in a pre-sterilized package, and a brochure entitled, "The Accurate Diagnosis of Streptococcal Infections Using a Dried Filter Paper Technique" were designed for the description and use of the filter paper method in transfer of throat cultures from patients to the laboratory (Figure 1). In September, 1963, 4,819 of these kits and brochures were distributed to physicians and laboratories in the state of Kansas. It was postulated that the widespread distribution of these kits and brochures might stimulate the more frequent use of throat cultures for processing in existing bacteriological facilities.

One year following the distribution of these brochures and kits, follow-up questionnaires were again sent to the laboratory directors. The information requested on this follow-up questionnaire was designed to detect a change in the frequency with which throat cultures were being performed:

- (1) Does your laboratory process throat cultures?
- (2) If so, how many were processed in 1963?
- (3) How many throat cultures were positive for beta hemolytic streptococci in 1963?
- (4) Are these figures from actual records or did you estimate them?
- (5) Are the filter paper kits being used by physicians in your area? If not, why?
- (6) Are the filter paper kits satisfactory for use in your laboratory?

Again all of the laboratory directors responded.

Results

Data obtained from the returned questionnaires is tabulated in Table 2. This material is grouped according to laboratory classification, source of data, and the year in which the cultures were performed. The cultures for the year 1962-1963 include those done in the year prior to the distribution of the brochures and kits. Data for the year 1963-1964 includes cultures done during the year following the distribution of the brochures and kits.

In the two-year period of this study, the total number of throat cultures processed increased from 33,004 cultures in 1962-1963 to 35,440 in 1963-1964. The difference of 2,436 cultures represents an increase of 7.4 per cent from the first to the second year of the study. Furthermore, government financed laboratories accounted for most of this increase.

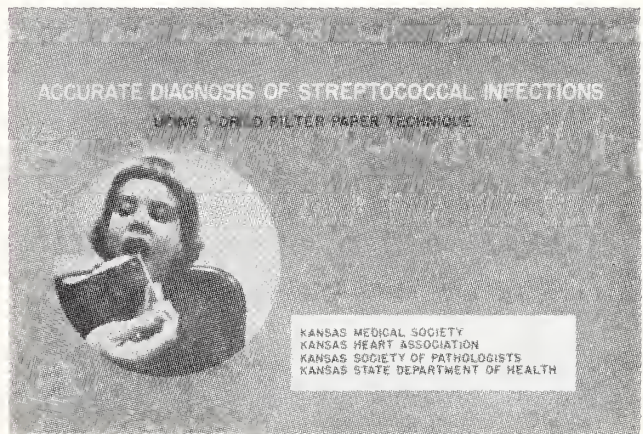


Figure 1. Cover of brochure distributed in 1963 to physicians and laboratories in Kansas.

From the replies to the initial questionnaire (1962-1963), it is evident from Table 2 that most private laboratories did not maintain permanent records of the throat cultures which had been processed in their laboratory during the previous year. Some directors of governmental laboratories also estimated the number of cultures processed during this period. The follow-up information obtained from the second questionnaire revealed a change in the source of data by the majority of private laboratories in that laboratory records were used more frequently for documentation of the reports.

Laboratory directors reported that beta hemolytic streptococci were cultured more frequently in the year following the distribution of the brochure and kits than during the previous year (Figure 2). The total number of throat cultures positive for beta hemolytic streptococci increased from 3,787 in the year 1962-1963 to 4,421 in the year 1963-1964, an increase of 634 positive cultures. It is noteworthy that governmental laboratories accounted for an increase of 982

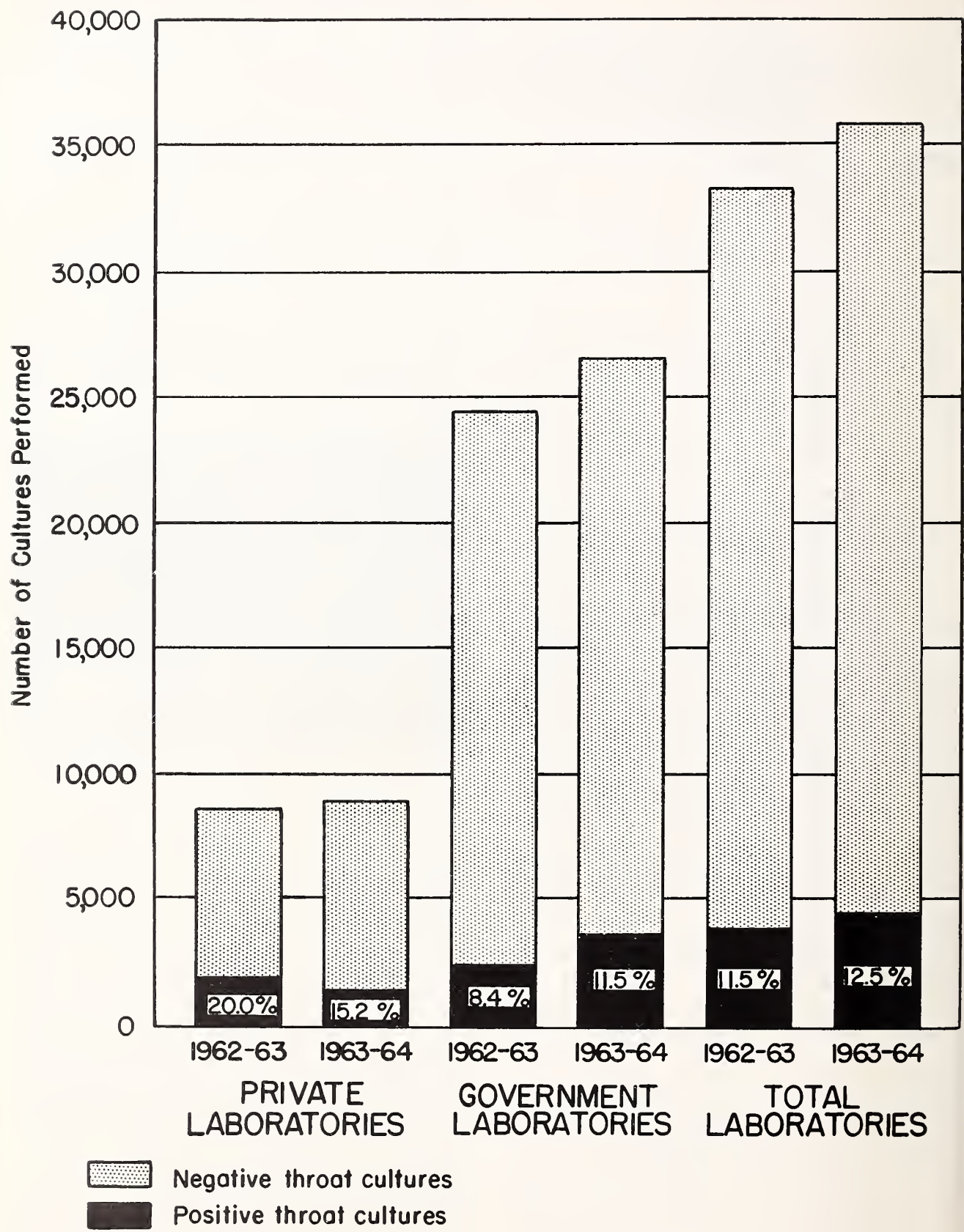


Figure 2. Throat cultures for beta hemolytic streptococci from laboratory records and estimates by laboratory class, Kansas, 1962-1963 and 1963-1964.

TABLE 2
THROAT CULTURES IN KANSAS AND PER CENT POSITIVE FOR
BETA HEMOLYTIC STREPTOCOCCI BY LABORATORY TYPE,
BY SOURCE OF DATA
1962-1963 AND 1963-1964

Source of Data	Private Laboratories		Federal-State KUMC		Total		Per Cent Change From 62/63 to 63/64
	62/63	63/64	62/63	63/64	62/63	63/64	
From laboratory records							
Total cultures performed	3,140	5,939	21,415	20,317	24,555	26,256	+ 6.0
Cultures positive for beta hemo- lytic streptococci	933	993	1,883	2,491	2,816	3,484	+23.7
Per cent cultures positive for beta hemolytic streptococci	(29.7)	(16.7)	(8.8)	(12.3)	(11.46)	(13.3)	
From laboratory estimates							
Total cultures performed	5,437	3,051	3,012	6,133	8,449	9,184	+ 8.7
Cultures positive for beta hemo- lytic streptococci	780	378	185	559	995	937	- 2.9
Per cent cultures positive for beta hemolytic streptococci	(14.4)	(12.4)	(6.1)	(9.1)	(11.42)	(10.2)	
From laboratory records and estimates							
Total cultures performed	8,577	8,990	24,427	26,450	33,004	35,440	+ 7.4
Cultures positive for beta hemo- lytic streptococci	1,713	1,371	2,068	3,050	3,781	4,421	+16.9
Per cent cultures positive for beta hemolytic streptococci	(20.0)	(15.2)	(8.4)	(11.5)	(11.45)	(12.5)	

positive cultures whereas a decrease of 342 positive cultures occurred as reported from private laboratories.

Considerable variation in the per cent of total throat cultures which were positive for beta hemolytic streptococci was observed from one laboratory to another (*Figure 3*). Overall, 11.5 per cent of the throat cultures were positive for beta hemolytic streptococci. The highest frequency of positivity (19.0 per cent) occurred in State-County laboratories; private laboratories were second highest with 15.2 per cent. Air Force laboratories reported the lowest frequency of positive cultures (6.4 per cent). The University of Kansas Medical Center reported 11.0 per cent of the throat cultures positive for beta hemolytic streptococci which approximates the overall average.

Only nine of 100 participating laboratories were using the dried filter paper kits one year after they were distributed (*Table 3*). All of the laboratories utilizing the kits were classified as private and in most the number of throat cultures processed annually was small.

Discussion

The filter paper method for the transfer of streptococci has been described in several recent publica-

tions.⁵⁻⁷ The method is easy to use and is quite efficient in sustaining the streptococci until the time of culture plating and eventual identification of the organism.^{6, 7} In spite of these facts, the data presented shows that the filter paper method for the transfer of streptococci from the patient to the laboratory is not widely utilized by physicians in Kansas. This can be explained by several factors. Distribution of the kits through the usual channels of supply houses was not emphasized and may have lessened the availability of the kits to the practicing physician. Undoubtedly, some Kansas physicians process throat cultures in their own office, using small, reasonably priced incubators, thus reducing the cost of the culture to the patient and the time required for identification of beta hemolytic streptococci.

Another explanation of the infrequent use of the filter paper method may be that many acute, upper respiratory tract infections are treated without a confirmed diagnosis as to etiology. In many laboratories the expense of performing a throat culture exceeds the cost for ten days of therapy to eradicate the organism. Some laboratory directors stated that they would reduce the cost of a throat culture if the total number of cultures increased to the point that the procedure

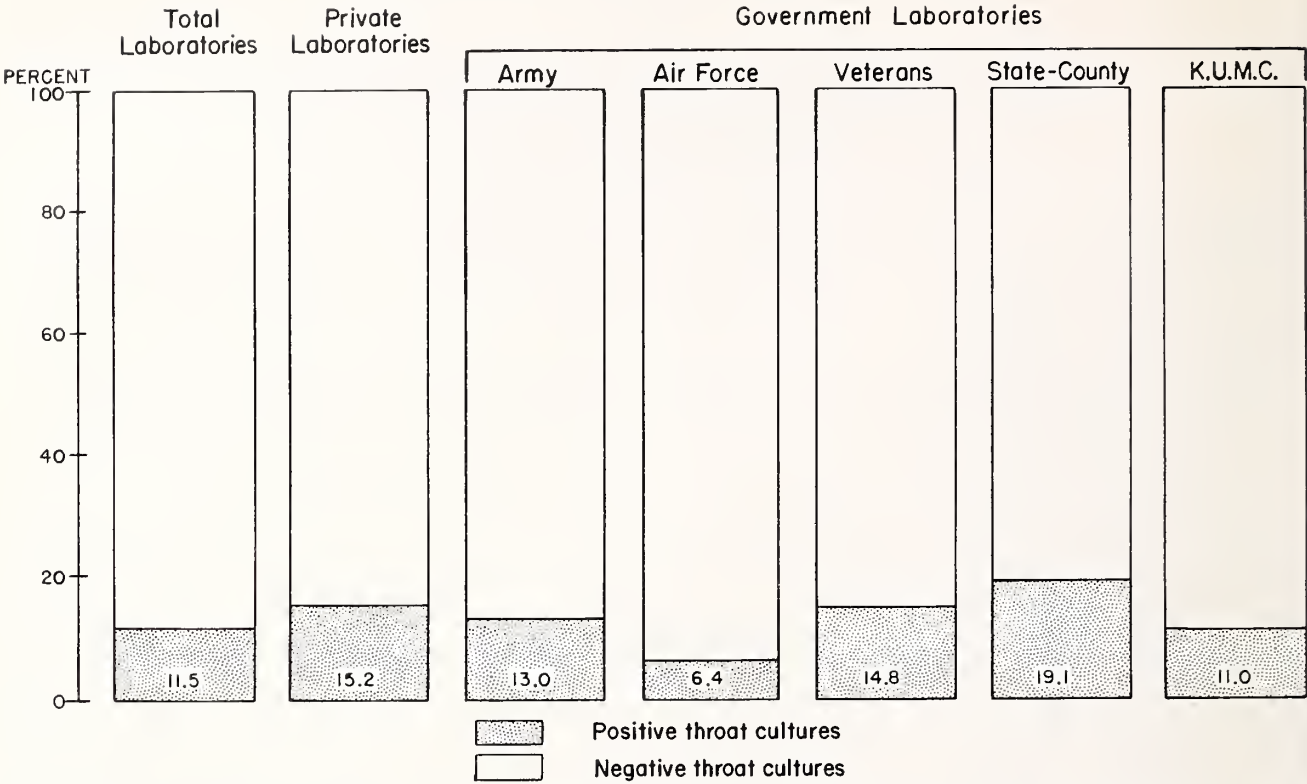


Figure 3. Per cent distribution of throat cultures tested for beta hemolytic streptococci by laboratory class, Kansas, June 1963-June 1964.

could be done with more efficiency. If therapy is withheld 48 to 72 hours until the diagnosis of streptococcal infection is confirmed by throat culture, there is no additional risk that rheumatic fever will follow. However, the treatment method of choice for streptococcal tonsillo-pharyngitis is a single intramuscular injection of 1.2 million units of benzathine penicillin G, thus requiring a patient's revisit to the physician's office. If oral antibiotic therapy is deemed advisable then additional telephone calls and prescriptions consume the physician's time. These factors, in addition to the culture expense, further complicates the task of streptococcal eradication to the extent that many practi-

tioners feel that upper respiratory tract infections should be treated on clinical grounds alone. Management of streptococcal disease in this manner may be justified provided the patient receives a full ten-day course of appropriate antibiotic therapy. Unfortunately, adequate therapy is not always administered.⁸

The overall average for positive throat cultures was 11.5 per cent in this study. Similar results of surveys from other parts of the country have been reported.⁹⁻¹¹ Wilson estimates that six per cent of acute upper respiratory infections in children are due to the beta hemolytic streptococcus.⁹ Rantz noted that of all upper respiratory tract infections in children aged two to ten years, 20 per cent harbored streptococci.¹⁰ From a study done on Philadelphia school children, Cornfield found that 27 per cent of symptomatic upper respiratory tract infections were associated with positive cultures for beta hemolytic streptococci.¹¹

A higher per cent of positive throat cultures was reported from state, county and private laboratories than from federal laboratories. This observation may indicate that private practitioners utilize these facilities for processing cultures only when they suspect streptococcal infection. However, the variation between the Army laboratories report of 13.0 per cent positive cultures and the Air Force laboratories report of 6.5 per cent positive cultures is difficult to explain.

TABLE 3
EXPERIENCE OF KANSAS LABORATORIES
WITH UTILIZATION OF FILTER PAPER
KITS FOR THE TRANSPORT OF
THROAT CULTURE MATERIAL
1963-1964

Laboratory stocks kits, kits not used	5
Laboratory stocks kits, kits used occasionally ..	3
Laboratory stocks kits, kits used frequently	3
Laboratory does not stock kits, kits not used ...	89
Total laboratories	100

In these military institutions, throat cultures are taken from all patients with upper respiratory tract illness. Environmental factors play an important role in the incidence of streptococcal infections³ and may account for some of the observed differences.

Summary

A brochure entitled "The Accurate Diagnosis of Streptococcal Infections Using a Dried Filter Paper Technique" was distributed statewide. Specially prepared and packaged kits for the transfer of throat cultures from the patient to the laboratory accompanied the brochures. It was postulated that this method would aid the practitioner in obtaining cultures, thereby assisting him in the diagnosis of streptococcal disease.

In evaluating this program, it was found that the filter paper method was not widely accepted in the state. Furthermore, little change was noted in the frequency with which throat cultures were taken during the year following the distribution of this material to physicians and laboratories in Kansas. Possible factors influencing these results were discussed. The per cent of throat cultures positive for beta hemolytic streptococci was 11.5 and similar to surveys from other parts of the country.

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A GIFT TO THE FUTURE

A new booklet, designed to stimulate active participation in the effort to eradicate tuberculosis, is currently receiving widespread distribution throughout the United States.

Produced by Lederle Laboratories, division of American Cyanamid Company, the 20-page booklet is entitled "A Gift to the Future."

The publication offers "a working plan to help eradicate tuberculosis" and highlights the importance of tuberculin testing of all school children. A special appendix provides information on school tuberculosis testing programs in the 50 states. The booklet also gives background information concerning the disease itself and facts about the overall nationwide program for its eradication.

"A Gift to the Future" is being made available to state health officers, medical societies, members of Congress, the national headquarters of various civic organizations and state and local tuberculosis associations. Additional distribution of the publication will be made available to school administrators and parent-teacher organizations.

The booklet was prepared by the Physicians Community Service at Lederle Laboratories, Pearl River, New York. Single copies are available upon request.

Tuberous Sclerosis

A Report of Two Cases

ARTHUR R. DICK, M.D., and

DEWEY K. ZIEGLER, M.D., *Kansas City, Kansas**

THE CLINICAL SYNDROME of seizures, mental deficiency and adenoma sebaceum emerged largely from the work of Vogt in 1908. Prior to this, multiple foci of cerebral sclerosis had been noted by Bourneville in patients who during life had exhibited seizures and mental deficiency. As the disease is now elucidated, it is characterized by a wide array of clinical and pathological phenomena. A variety of skin lesions are common; skeletal abnormalities and neoplasms of the kidney, heart, lung and retina occur. Seizures are a frequent symptom and said to be present in 80 per cent of cases.¹ Mental retardation is usually apparent by the third year,² and is almost invariably progressive. The incidence of tuberous sclerosis is one in 30,000 in the general population and one in 300 admissions to state hospitals for the mentally retarded. More than 6,000 cases exist in the United States.³ Inheritance is now thought to be on the basis of a dominant autosomal gene with an independent pair of modifying genes.⁴ Study of the incidence and mode of inheritance has been complicated by the existence of abortive forms of tuberous sclerosis, many of which may be undetected. The following two cases reflect some of the diversity of the syndrome.

Case 1—A 12-year-old white male was admitted to the Pediatric Psychiatry Service because of autistic behavior since age three years. Hyperactivity, withdrawal from social contact and some degree of mental retardation were apparent. A history of possible major motor seizures during the first three or four years of life was obtained. Over the two years prior to admission he was in a special school where continued autistic behavior and echolalia were exhibited. During outpatient evaluation by the Child Psychiatry Service, skin changes suggestive of tuberous sclerosis were noted and the patient was admitted for evaluation. The patient's only sibling died at age 12 following heart surgery. During surgery an intra-atrial septal defect and a two-chambered right ventricle were discovered. At autopsy a Dandy-Walker defect (atresia of fourth ventricle foramina) was found. This sibling at no time exhibited seizures, mental retardation or skin changes suggestive of tuberous sclerosis.

Physical examination revealed a hyperactive and obviously mentally retarded white male. The child's

speech and motor mannerisms were bizarre. He was quite active, kept referring to himself in the third person, and showed almost complete absence of normal emotional responsiveness. He frequently made self-reassuring comments such as, "They aren't going to hurt." He rarely followed instructions and formal testing was therefore difficult. The patient did not read or write.

Adenoma sebaceum of the face and forehead (*Figure 1*), a shagreen patch on the back (*Figure 2*), and café au lait spots as well as depigmented areas (*Figure 2*) were present.

Two cases of tuberous sclerosis are reported.

The disease entity is reviewed, and the variability of the syndrome is emphasized. Classical cases show progressive deterioration but *formes frustes* occurs with some individuals being asymptomatic.

The importance of diagnosis is emphasized in order that prognostic as well as genetic information may be provided to families.

A "mulberry" shaped yellow retinal tumor was noted near the left disc. Skull x-rays revealed periventricular calcification.

The EEG exhibited focal slowing and spike activity in the right posterior temporal area (*Figure 3*).

An EKG, IVP, and urinalysis were essentially normal. The patient was readmitted a short time later for a pneumoencephalogram which revealed a characteristic picture of "candle guttering," diagnostic of "tubers," projecting into the ventricle.

Case 2—A six-year-old female was admitted for the first time, referred by her private pediatrician for evaluation of a "behavior problem." The patient's behavior was apparently normal until approximately three years prior to admission when the patient was noted to be "fidgety," nervous, and disobedient. Shortly before admission, the patient entered kindergarten where she was hyperactive and exhibited a short attention span. She had "frequent fights" with other children and spent much of her time outside the classroom because of disobedience.

* From the Department of Medicine, Section of Neurology University of Kansas Medical Center.



Figure 1. Case 1 showing adenoma sebaceum and fibromata of the skin of the forehead.



Figure 2. Case 1, shagreen spots of the skin of the back.

At age ten months, two seizures occurred while the patient was febrile. The patient was described as "having her eyes roll up," being flaccid and vomiting before and after the episodes. An episode of staring, rigidity and apparent lack of awareness occurred at age 5½ years. At the time of birth, areas of skin depigmentation were noted. "Growths" on the skin were thought to have been present since about the age of three years.

During pregnancy (six months), the mother was treated for a sinus infection with radiation and penicillin. Birth was full-term and spontaneous. The patient walked by 11 months and began speaking at one year. There are four siblings, living and well, with apparently normal behavior. A maternal uncle had encephalitis in childhood and experienced seizures in early adulthood. Just prior to admission, the patient underwent psychological evaluation at the Children's Rehabilitation Unit of the University of Kansas Medical Center. She was noted to be in the normal range of intelligence, and academic achievement as measured by the Wide-Range Achievement Test was thought adequate. Motor and perceptual skills were considered normal.

On admission, physical and neurological examination were essentially normal except for the patient's hyper-

activity and cutaneous lesions. An erythematous pinpoint maculopapular eruption was present over the cheeks and nose in a butterfly distribution. Flesh-colored plaques were noted on the right lower lid and forehead. Grouped flesh-colored papules over the lumbar spine and areas of depigmentation on the abdomen and right thigh were present. The EEG revealed a severe paroxysmal abnormality (Figure 4). Chest and skull x-rays were normal.

Discussion

THE DISEASE COMPLEX

Tuberous sclerosis may be considered a congenital developmental abnormality in which multiple organs or organ systems of ectodermal origin (skin, brain, and retina) as well as mesodermal origin (heart and kidney) may be involved. Affected areas of the brain, which resemble tubers, are pale, hard and on microscopic examination reveal an increase in astrocytic nuclei. Gliosis and the presence of large bizarre cells are a constant finding. These tumors are often located adjacent to the ventricles. They frequently calcify and are then visible as periventricular calcifications on x-ray.

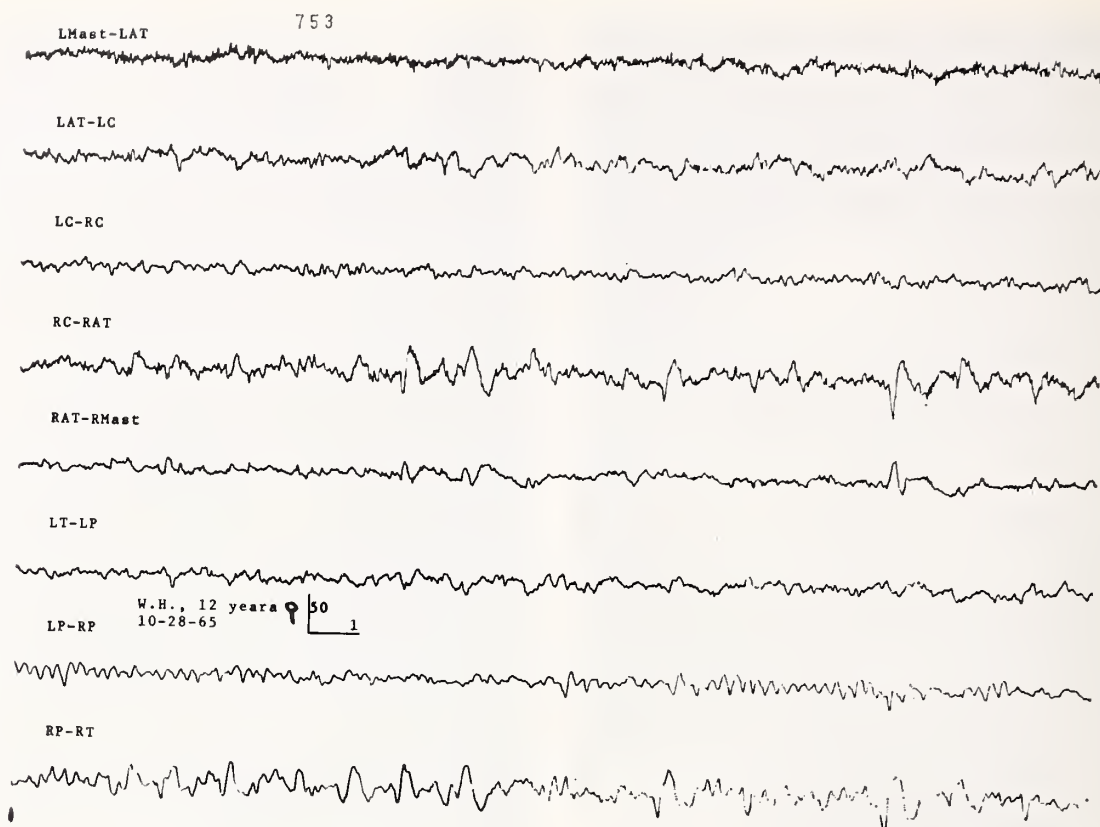


Figure 3 Case 1, electroencephalogram showing focal spike abnormality.

Skin manifestations occur in 60-70 per cent of cases,¹ the commonest being adenoma sebaceum. Some skin manifestations may be present at birth, but usually they are noted between age five years and puberty. Any one of the following are considered to be almost diagnostic of tuberous sclerosis:

- (1) *Adenoma sebaceum*. This lesion has a butterfly distribution over the nose and cheeks (*Figure 1*) and consists of many circular or oval nodules, which may be white, yellow, red or brown in color.
- (2) *Shagreen (peau de chagrin) patches*. These are irregular, furrowed, pink to white plaques, typically located over the lumbosacral area (*Figure 2*).
- (3) *Subungual fibromas*. These lesions may be at the edge of, as well as under, the nails and are more frequently found on the toes.

Also common, but not as highly diagnostic are the following lesions:

- (1) *Multiple doughy fibromata*. These are sometimes seen at birth and may be the only very early external manifestations of tuberous sclerosis.
- (2) *Cafe-au-lait spots and depigmented nevi*. It has been pointed out that massive myoclonic spasms

of infancy in a child with these lesions should suggest the diagnosis of tuberous sclerosis.⁵

Ocular manifestations occur in less than ten per cent of cases and consist principally of small white to yellow foci or raspberry-like tumors located near the disc as in Case 1.¹ Visual symptoms are uncommon, even in the presence of such lesions.

Histologically mixed tumors of the kidney (fibromyomas and lipomyomas) are variously reported as occurring in 30-80 per cent of cases.¹ They are usually benign and seldom cause symptoms or clinical signs. Cardiac tumors, usually rhabdomyomas, may cause death *in utero* or give rise to EKG changes and cardiac insufficiency. Pulmonary lesions are rare and usually occur in females in the third decade.⁶ These lesions are usually cystic and may occur in the lung parenchyma or sub-pleurally. Skeletal lesions are said to occur in 60-65 per cent of patients.⁷ These consist of small areas of rarefaction in the hands and feet and examination of the long bones may reveal cysts and cortical thickening. Skull x-rays may reveal frontal hyperostosis.

A variety of congenital anomalies have been reported in patients with tuberous sclerosis.¹ It is of great interest that the sibling of Case 1, with no history of seizures or mental defect, suffered from congenital defects of the heart and central nervous system (Dandy-Walker defect).

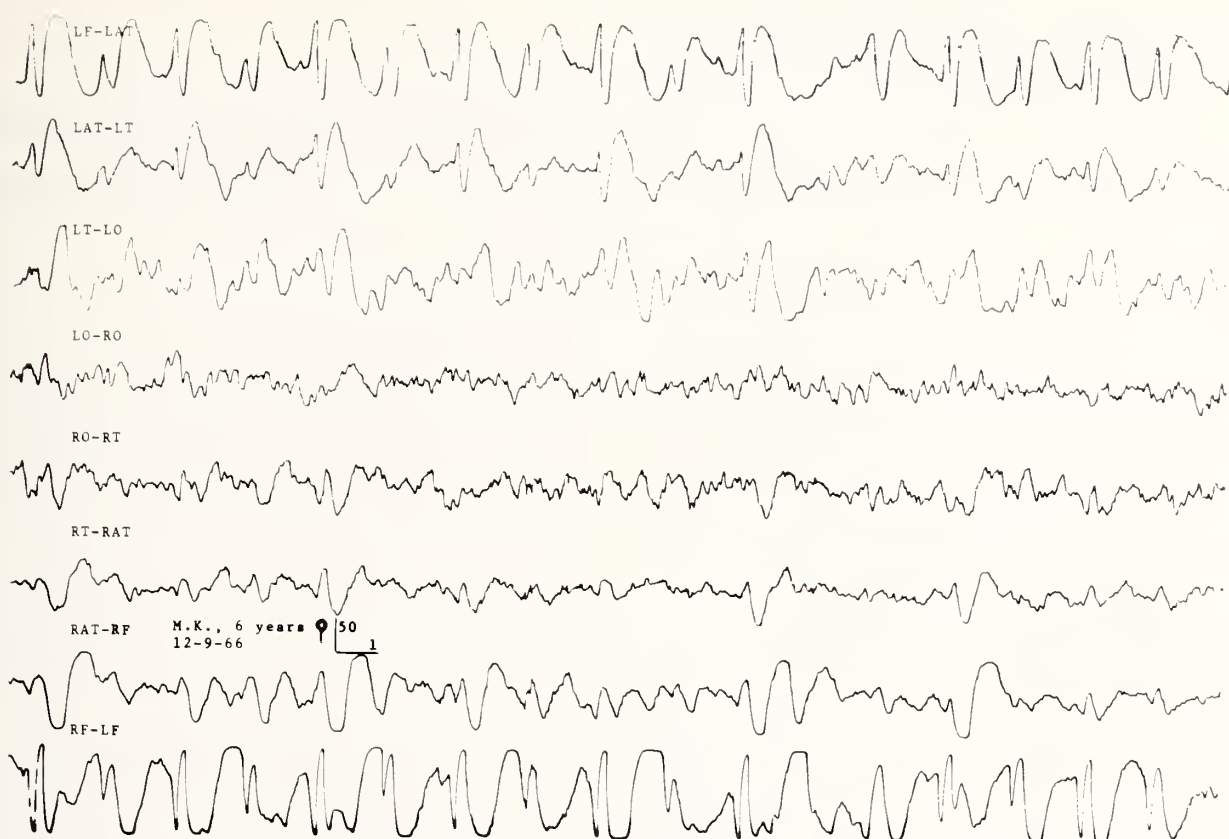


Figure 4. Case 2, electroencephalogram showing severe generalized abnormality.

DIAGNOSTIC PROBLEMS

The diagnosis of tuberous sclerosis is obvious in the presence of skin lesions, mental retardation and seizures. Any one of these phenomena, however, may be variable to absent. Some patients with tuberous sclerosis documented by autopsy, may have normal intelligence, be free of psychosis, and reach old age.¹ Abortive forms, or the so-called *formes frustes*, may exhibit only cutaneous manifestations. Critchley² has provided an extensive discussion of the variability of the psychological phenomena presented by a large series of these patients. A psychosis, resembling a primitive catatonic schizophrenia, was present in many of his patients and he observed that the depth of the psychosis may in some cases be independent of the degree of defect in intelligence. Some patients were described as being of essentially normal temperament but exhibiting rather rapid deterioration between the fifth year and puberty. Although most laboratory tests give normal results, the EEG frequently shows abnormality. Although not specific, it is usually more severe than one would expect from the clinical history. This was certainly true in Case 2.

PROGNOSIS

The prognosis in severe cases of tuberous sclerosis is generally unfavorable. The course is usually a

slowly progressive one, sometimes with plateaus.¹ There is probably no correlation between the age of onset and the prognosis, but sudden severe mental symptoms are considered a bad prognostic sign. Three per cent of patients are dead by the first year, 28 per cent by the tenth year and 75 per cent by the age of 25 years. Of all the manifestations of tuberous sclerosis, mental retardation may be the most devastating. Deterioration of the mental state is thought to be independent of the frequency or severity of seizures. The prognosis for Case 1 is probably one of continued progressive deterioration because of the already severe mental symptoms, dermatological manifestations, intracranial calcifications, and a history of seizures. The prognosis of Case 2, however, is uncertain. This patient, while exhibiting a "behavior problem" is of essentially normal intelligence and may be one of those individuals who will be afflicted with only an abortive form of the disease. Tuberous sclerosis of all degrees of clinical severity occurs, from patients like Case 1, to individuals with essentially no clinical phenomena. Recognition of this disease is important not only in order to render a prognosis for the patient, but also to provide some basis for informed genetic counseling. The physician should investigate all available relatives for possible

(Continued on Page 116)

Diarrhea in Infants

The Role of Viruses in the Etiology of Infantile Diarrhea

ABBAS M. BEHBEHANI, Ph.D.,* *Kansas City, Kansas*

INFANTILE DIARRHEAL DISEASES are a major cause of death among infants and young children in under-developed areas of the world (some 5 million deaths each year).¹ However, due to higher standards of living and better hygienic measures in the United States, infant mortality from diarrhea has been nearly eliminated. Nevertheless, the morbidity rate is still high; outbreaks are frequently observed in hospitals, orphanage homes and other children's institutions.

The etiologic role of *Shigella*, *Salmonella* and pathogenic *Escherichia coli* in infantile diarrhea is well established. However, only about 50 per cent of diarrhea cases could be attributed to these bacteria, the remainder being generally attributed to other factors such as viruses. The role of viruses in infantile diarrhea has been studied by many investigators.²⁻¹² With the exception of a few studies of isolated outbreaks, the results of such investigations have generally failed to associate specific viruses with the disease and are often at variance with each other.

Findings of Various Investigations

Two separate investigations were conducted on infantile diarrhea cases occurring in Houston, Texas, the first during 1959-61 and the second during 1962-63. In the first 390 infants with diarrhea and 384 well babies as controls were studied. Enteroviral isolation rates of 5.6 per cent for diarrhea patients and 4.4 per cent for controls were obtained. In the second study,¹¹ however, echoviruses were encountered 2.25 times and adenoviruses 1.8 times more frequently in infants with diarrhea than in well infants. These investigators concluded that their results did not establish an etiological role for enteroviruses and adenoviruses in infantile diarrhea. In contrast, Ramos-Alvarez and Olarte¹⁰ concluded from a study of 246 children with diarrhea under five years of age and 158 matched well children in Mexico City, Mexico, that viruses have an important etiologic role in the disease. This conclusion was based on the findings that adenoviruses, echoviruses and certain untyped viruses were isolated 14 times respectively, 8 times and 5.6 times more frequently from diarrheal children

than from non-diarrheal controls. Although both the Houston and the Mexico City study were conducted on children belonging to comparable socio-economical groups, virus isolation rates were quite different in the two studies. This discrepancy may relate to variations in (a) types of cell cultures and procedures used for virus isolation; (b) clinical follow-up of children in order to eliminate from the control group those developing diarrhea after collection of specimens; and (c) performance of the proper serologic tests in order

The role of viruses in infantile diarrhea has been studied by many investigators. With the exception of a few studies of isolated outbreaks, the results of such investigations have generally failed to associate specific viruses with the disease and are often at variance with each other.

The data accumulated in this study indicate that depending upon climatic conditions, socio-economic status, social habits and sanitary measures of the community, infantile diarrhea may be caused by viruses, bacteria, nutritional deficiency, other still unknown agents or a combination of these factors.

to establish an association between the isolated virus and the disease manifested by the patient yielding the virus.

The etiologic role of viruses in infantile diarrhea was investigated recently at the University of Kansas Medical Center. In a one-year (1965) study,¹² all infants suffering from diarrhea while in the nursery for the newborn, as well as all infants hospitalized with diarrhea as the primary complaint, were included. Well infants from the nursery and the outpatient clinics were selected as controls during the various months of 1965 and were free of diarrhea during two weeks before and two weeks after collection of specimens. Thirty-eight diarrheal infants (presenting 40 episodes of diarrhea) and 31 well infants from both low and average income groups were investigated. Fecal and throat specimens as well as blood samples from all

* From the Section of Virus Research, Department of Pediatrics, University of Kansas School of Medicine.

diarrheal (day of onset) and control (day of entry) infants were collected. Convalescent bloods were collected from infants yielding viral agents. All fecal and throat specimens were inoculated into rhesus monkey kidney, human amnion, HeLa and HEP-2 cell cultures and also into newborn mice. Seven enteroviruses (coxsackievirus A types 17 and 20, coxsackievirus B type 2, echovirus types 2 [from two patients] and 16, and poliovirus type 2) and one adenovirus were isolated from diarrheal babies, giving a 20 per cent isolation rate. In contrast, no viral agent was isolated from the control subjects (*Table 1*). Serologic tests performed, with acute and convalescent sera collected from diarrheal babies yielding the viral agents, confirmed infections with all isolated viruses except in one patient. This was the baby who yielded coxsackievirus A type 17 and in whom no rise in specific titer between the acute and the convalescent stages was detected. One infant suffering from two episodes of diarrhea, occurring ten days apart, yielded coxsackievirus B type 2 during the first episode and echovirus type 2 during the second. Serologic tests done with the three sera collected in connection with the two diarrheal episodes confirmed the sequential infections with the two different viruses (*Table 2*). One of the serologically confirmed cases was associated with an attenuated (Sabin-type) poliovirus type 2 which was apparently acquired under natural conditions since the virus could not be traced to prior vaccination of either the baby, members of her family or the community. The above findings lead to the conclusion that certain enteroviruses are etiologically associated with infantile diarrhea.

The different results obtained by various investigators who have studied the role of viruses in infantile

diarrhea suggest the possibility that, depending on the geographical location, viruses may or may not play a significant etiologic role. On this assumption, two independent studies have been recently conducted on clinical specimens collected from diarrheal and non-diarrheal babies residing in two developing countries of southeast Asia and the Middle East, namely Karachi, Pakistan and Teheran, Iran. The Karachi study was conducted at Baylor University College of Medicine in Houston, Texas.¹³ From April through July, 1964, 385 fecal specimens from infants with diarrhea and 502 fecal specimens from matched well babies in Karachi were collected. Upon collection, the specimens were frozen and then transported on dry ice to Houston, by air. All specimens were inoculated into monkey kidney, human embryonic kidney, WI-38 and KB cell cultures. Newborn mice were not inoculated with these specimens. The diarrheal group gave a total virus isolation rate of 78 per cent while a total isolation rate of 80 per cent was obtained with the nondiarrheal group. The rate of adenovirus isolation, however, was significantly higher in the diarrheal group (eight per cent in diarrheal versus two per cent in nondiarrheal babies). Most of the adenoviruses were obtained from patients during the single month of April; the isolation rate was actually less than that of well babies during the other three months. Furthermore, while no differences in the isolation rates of poliovirus, echovirus and coxsackievirus B were observed between the two study groups, diarrheal babies yielded three times as many group A coxsackieviruses (12 per cent) as compared with well babies (four per cent). These investigators concluded that even if adenoviruses and group A coxsackieviruses play an

TABLE 1
VIRUS ISOLATION FROM DIARRHEAL
AND NONDIARRHEAL INFANTS RESIDING IN KANSAS CITY

Study Group	Total Virus Isolation		Virus Isolated in Cell Cultures				
	NO.	PER CENT	POLIO	COXSACKIE A	COXSACKIE B	ECHO	OTHERS
Diarrhea (38 babies*)	8	20	type 2†	types 17, 20	type 2	type 2 (2 isolations) 16	adenovirus
Control (31 babies)	0	0	†	—	—	—	Herpes simplex‡

* Two of these babies each had two episodes of diarrhea.

† The baby yielding this virus had no history of vaccination and showed a significant rise in specific antibody titer during convalescence; one baby with diarrhea and one control baby yielding three polioviruses had received the oral vaccine three to four weeks prior to collection of specimens. The latter two babies were not entered in this Table.

‡ The control baby yielding this virus (in throat swab) subsequently developed herpetic gingivostomatitis and thus was not included among the controls.

TABLE 2
NEUTRALIZING ANTIBODIES IN THREE SERA COLLECTED FROM ONE
INFANT WITH TWO CONSECUTIVE EPISODES OF DIARRHEA AGAINST
TWO DIFFERENT ENTEROVIRUSES ISOLATED FROM SAME DURING THE TWO EPISODES

<i>Virus</i>	<i>Reciprocals of serum titers*</i>		
	FIRST SERUM (ACUTE FOR 1ST EPISODE)	SECOND SERUM (CONVALESCENT FOR 1ST, ACUTE FOR 2ND EPISODE)	THIRD SERUM (CONVALESCENT FOR BOTH 1ST AND 2ND EPISODES)
Coxsackie B2 (isolated during 1st episode)	100	250	250
ECHO 2 (isolated during 2nd episode)	<25	<25	1,000

* All three sera were tested against approximately 176 tissue culture infective doses of virus.

etiologic role in infantile diarrhea, they can be related to less than 25 per cent of cases.

The Teheran study is now in progress at the University of Kansas Medical Center. In a cooperative study with the University of Teheran College of Medicine, 40 fecal specimens from diarrheal infants and 40 specimens from matched infants without diarrhea were collected in Teheran during late summer and fall (August-November) of 1966. Immediately after collection the specimens were mixed in equal amounts (1:1), with 2 molar MgCl₂ (for protection against heat inactivation of viral agents during transportation) and either immediately or after storage at -20° for a few days, shipped to Kansas City at ambient temperature by air. All specimens from the diarrheal infants have been inoculated into monkey kidney,

human amnion and also into newborn mice. Most of the viruses isolated in cell cultures from diarrhea specimens have been identified. Specimens from well babies have been inoculated into cell cultures but the majority of isolated viruses have not yet been identified.

Table 3 presents the isolation results now available. It is observed that virus isolation rate of nondiarrheal babies is considerably higher than that of diarrheal babies (75 per cent versus 40 per cent). Attempts at typing viral isolates from the control babies have indicated that the majority of these isolates are either mixtures of two or more viruses (representing multiple viral infections in the babies) or serotypes that are unrelated to the known prototypes of human enteroviruses. A high incidence of multiple viral infections

TABLE 3
VIRUS ISOLATION FROM DIARRHEAL AND NONDIARRHEAL
BABIES RESIDING IN TEHERAN, IRAN

<i>Study Group</i>	<i>Total Virus Isolation</i>		<i>Virus Isolated in Cell Cultures</i>						<i>In Newborn Mice</i>
	PER NO.	PER CENT	POLIO	COX-SACKIE A	COX-SACKIE B	ECHO	ADENO	UNTYPED	
Diarrhea (40 babies)	21*	40	type 3 (2 isolations)	type 20	—	types 1, 7, 11 (3 isolations), 15, 21	4	2†	5
Control (40 babies)	30	75				type 5		29†	in prog.

* Five of these viruses were isolated in newborn mice from five specimens that were positive in cell cultures.

† More than one half of these viruses have been subjected to typing procedures. The results, so far obtained, have indicated that the majority of these isolates are either mixtures of two or more serotypes (due to multiple virus infections) or represent single serotypes that are unrelated to the known prototypes of enteroviruses.

among the Pakistani children was also detected by the Houston group. Although viral isolates from the control babies have not yet been typed, it is apparent from the virus isolation rates of the two study groups, that enteric infections with viruses (mainly enteroviruses and adenoviruses) among infants in Teheran is not generally associated with diarrhea. When all viral isolates from the two groups are typed, it is possible that, as revealed by the Karachi study, certain groups of viruses will also be found to play a significant role in infantile diarrhea in Teheran. However, it should be pointed out that although the socio-economic conditions in Teheran are similar to those in Karachi, Teheran has a considerably colder climate. This variation may cause significant differences in the findings of the two studies.

Discussion and Conclusions

That viruses, mainly enteroviruses and adenoviruses, are associated with infantile diarrhea is well documented by the data obtained from studies on isolated outbreaks and also by the data obtained from certain epidemiological studies of this disease. Echovirus type 18 was identified as the etiological agent in an isolated outbreak of gastroenteritis among premature and full-term infants.⁶ Echovirus types 14 and 11 have been similarly incriminated.^{7, 8} Furthermore, the results of both the Mexico City and the Kansas City studies, described above, leave no doubt that adenoviruses and enteroviruses are associated with infantile diarrhea. However, it is still unclear whether viruses are responsible for all or at least the majority of infantile diarrhea cases for which other known etiological factors such as bacteria, parasites and nutritional factors are not incriminated. At best, viruses have been found to be associated with no more than 25 per cent of cases. In such studies, enteropathogenic bacteria were isolated from 19 per cent (Kansas City study) and 19.6 per cent (Karachi study) of cases. In the Karachi study, approximately 50 per cent of the hospitalized diarrhea patients (339 babies) had some degree of nutritional deficiency (only 54 of these babies were included in the virologic study, all infants being studied for incidence of bacteria and parasites).¹⁴ Furthermore, in the Karachi study, no significant difference in the incidence of parasites between diarrheal and nondiarrheal babies was found. The results of various investigators indicate clearly that a microbiological pathogen (virus, bacterium or parasite) could not be incriminated in the majority of infantile diarrhea cases. Rather, the accumulated data indicate that depending upon climatic conditions, socio-economic status, social habits and sanitary measures of the community, infantile diarrhea may be caused by viruses, bacteria, nutritional deficiency, cer-

tain other still unknown agents or a combination of these factors.

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Marked seasonal changes can cause flareups of peptic ulcer symptoms and, at least in certain areas, influence the incidence of perforation. Dr. Robert L. Bradley of Huntington, W. Va., reports "a bunching at the onset of warm weather in the spring or just prior to the onset of cold weather in the fall." An analysis of 98 patients with bleeding ulcers showed the onset of perforations coincided with two clearly defined periods: stabilization of the temperature in the range of 70 degrees after a prolonged cold period (March through May), and immediately preceding the onset of cold weather (August through October). Semi-tropical areas, such as Miami and New Orleans, would show a different environmental pattern, he noted.—*Am. J. Surg.*, May, pp. 656-659.

Diagnosis and Treatment of—

Urinary Tract Infection in Children

LUCIAN L. LEAPE, M.D., VIRGINIA L. TUCKER, M.D., and
DOUGLAS W. VOTH, M.D., *Kansas City, Kansas**

Introduction

IN RECENT YEARS physicians have become increasingly aware of the prevalence and seriousness of urinary tract infection in childhood. Ten or 15 years ago, "cystitis" or "pyelitis" in a child was regarded with little more concern than an upper respiratory infection. The frequent failure of antibacterial therapy and the discovery of the high incidence of anatomic or physiologic abnormalities in the urinary tract of infected patients have led to the realization that urinary tract infection in childhood is often not an isolated event. In many cases, urinary tract infection is a sign of serious underlying disease, obstructive or otherwise, which if uncorrected will lead to progressive renal destruction.

Unfortunately, long-term follow-up information as to the natural course of urinary tract infection in childhood is limited. The few studies which have been performed¹⁻⁴ provide sobering data: ten per cent of patients hospitalized with childhood urinary tract infection are dead before adulthood is reached. Over half have progressive renal damage or persistent infection.

Improvements in diagnostic methods and their more frequent application to children with urinary tract infection have resulted in more accurate diagnoses and much more satisfactory treatment than previously. Despite this, in a significant percentage of patients, current diagnostic studies do not reveal a specific abnormality, and treatment is unsatisfactory. In some patients detection is delayed (often by sheer paucity of symptoms) until irreversible damage has occurred to the kidneys and collecting systems. Finally, in a small percentage of patients no truly satisfactory treatment exists despite a thorough understanding of the pathophysiology involved.

For these reasons, a Children's Urinary Infection Clinic has been established at the University of Kansas Medical Center for the study and treatment of these patients. Experience has shown that recurrences will occur in over 50 per cent of patients with urinary tract infection if the patients are followed for a suf-

ficient period of time. The reasons for this are not clear, but it is apparent that prolonged follow-up is necessary if recurrences are to be detected and progressive renal damage prevented. Our interest is in following and studying these problem patients to determine if the means of diagnosis can be improved and the high failure rate can be prevented, either by alterations in duration and type of drug treatment or by other methods. It should be pointed out that leading authorities do not agree on many details of management. Even such a basic question as the duration

Urinary tract infection in childhood is common, difficult to diagnose, and often difficult to treat. Urine culture is required for accurate diagnosis and treatment. Most patients require diagnostic evaluation (IVP, voiding cystogram, cystoscopy, etc.) to determine if there is underlying organic pathology. Especially in infants a large percentage will be found to have a defect requiring surgical correction. Failure to correct these defects results in failure of antibiotic therapy and recurrence of infection.

Antibiotic therapy must be keyed to the organism and its sensitivities. In many cases prolonged treatment is necessary, and in all cases, follow-up must extend over several years if recurrences are to be minimized and promptly treated.

of antibacterial treatment for a first, uncomplicated infection is open to considerable debate. One of the purposes of this clinic is to obtain data so that treatment can proceed in a more meaningful fashion.

The following discussion presents our concepts as to the pathogenesis and significance of urinary tract infection in childhood. In addition, the approach we find useful in the diagnosis and treatment of urinary tract infection is outlined in some detail. This represents a distillate of current thinking combined with personal experience. It provides, we think, a rational approach consistent with available information.

* From the Section of Pediatric Surgery, the Department of Pediatrics, and the Section of Infectious Disease of the University of Kansas Medical Center, Kansas City, Kansas.

Pathogenesis of Urinary Tract Infection

Frequently, urinary tract infection is secondary to *urinary stasis*. In normal voiding the bladder contracts completely, eliminating all urine and any bacterial contamination which may be present. If there is incomplete emptying (as in bladder neck obstruction, neurogenic bladder, or vesicoureteral reflux), contaminants are not eliminated and bacterial multiplication can take place. Thus, contaminated bladder urine may lead to local invasion (cystitis), ascending infection (pyelonephritis), or the more severe problem of septicemia.

The factors which convert asymptomatic bacteriuria to invasive, symptomatic sepsis are not understood. Occasional patients have chronic bacteriuria with no episodes of acute pyelonephritis, but these are probably rare, and frequent flareups of renal infection are the rule. With each episode there is further damage leading to progressive renal insufficiency and a contracted, scarred kidney.

There are many causes of lower urinary tract stasis. Obstructive lesions, such as phimosis, meatal stenosis, congenital or acquired urethral stricture, posterior urethral valves, and bladder neck contracture, are the more common lesions. Vesicoureteral reflux is frequently found. Authorities disagree as to the role of bladder neck obstruction in the etiology of reflux, but there is no doubt that reflux is frequently associated with infection. Neurogenic bladder (such as that associated with myelomeningocele, transverse myelitis or diabetes) will be found in some patients.

Most infants under the age of two years will have a specific lesion—usually obstructive—which must be corrected before urinary tract infection can be cured. After the first two years of life urinary tract infection is much more frequent in girls than boys.⁴⁻⁶ In many cases, the reason little girls get urinary tract infection is not clear. The urethra in a young girl is short (1-2 cm.), and it is understandable how easily bacterial contamination of the bladder can occur. Clinical studies support this.⁷ It is probable that there is occasional bladder soiling in virtually all females. The question then is not why some develop clinical infection, but why all do not.

In many patients with urinary tract infection there is no demonstrable stasis or any other morphologic change. In these, functional derangements have been implicated, such as abnormal pressures secondary to prolonged urinary retention (infrequent voiders) or functional bladder outlet obstruction. Although these factors may be operative in some, failure to demonstrate an abnormality by specific diagnostic tests most probably reflects the inadequacy of our methods. There is every reason to think that as new diagnostic tools are developed, a higher and higher percentage

of patients will be found to have an underlying basis for their infection. At the present time, we must admit that in a sizable fraction⁸ we are unable to find an anatomic abnormality.

Diagnosis of Urinary Tract Infection

The difficulty in diagnosis of urinary tract infection in children under five years of age is primarily the result of the nonspecificity of signs and symptoms and their uncharacteristic nature as compared to adults. De Luca *et al.*⁵ estimated an average delay of 18 months in diagnosis of children less than three years of age in a survey of 1,279 pediatric patients with recurrent urinary tract infections.

Several studies^{5, 9} of the most common symptoms in children less than five years of age with urinary tract infections have been reported. During the first one to two months of life, failure to thrive, feeding problems, vomiting, jaundice, and absence of fever were found most commonly. From two months to two years of age, fever, vomiting and failure to thrive were the primary symptoms associated with urinary tract infections. From two to five years, fever was the most frequently observed symptom in over 50 per cent of Smellie's series and was the only symptom in 25 per cent of De Luca's cases over three years of age. Other symptoms commonly seen in this age group were frequency, dysuria, abdominal pain, and recurrence of enuresis after established bladder control. After age five, fever, frequency, dysuria and abdominal pain were evident. Children with these signs and symptoms should be suspected of having a urinary tract infection, and initial investigation of the illness should include a urine culture.

The accurate diagnosis of urinary tract infection depends on finding significant numbers of bacteria in the urine. Separation of contamination from infection by quantitation of urinary bacteria has permitted the use of clean voided midstream urine collections for culture. This avoids the dangers of catheterization, but in selected circumstances the latter may be necessary.

Recommendation of the clean voided specimen is based on the principle that in true infection there are large numbers of organisms (100,000-1,000,000/ml. of urine), whereas in contaminated urine relatively few bacteria (<1,000/ml. of urine) appear in the specimen if properly obtained. Low bacterial counts are considered to be the result of contamination from the urethra, prepuce, or vulva. Therefore, an uninfected but contaminated urine may have a bacterial colony count of 1,000 colonies or less per ml. of urine. Counts of 100,000 colonies or more per ml. of urine with isolation of a single organism in two consecutive urine specimens are diagnostic of urinary tract infection with 95 per cent confidence level¹⁰ when compared to catheter collection. The confidence level

is 80 per cent with one culture. Repeat cultures are indicated when initial quantitative counts are less than 100,000/ml. or when multiple organisms are recovered. Therefore, it is essential to obtain two consecutive, properly obtained, clean voided urine specimens to make an etiologic diagnosis of a urinary tract infection.

The method used at the University of Kansas Medical Center for obtaining clean voided specimens in infants and older children is as follows:¹¹

In older children the perineum and vulva of the female or glans penis or prepuce of the male are scrubbed with pHisoHex® (Winthrop Laboratories) for two to three minutes. The labia majora of the female are separated and gently washed with pHisoHex® using single downward strokes with a fresh cotton swab for each stroke. The same procedure for washing the perineum and vulva is repeated using aqueous Zephiran® (Winthrop Laboratories) 1:1000 dilution.* At least six clean swabs should be used. In order to avoid irritation from pHisoHex®, sterile water is poured over the vulva or the glans penis. The vulva and perineum are then dried with sterile cotton, gauze or towel, being careful not to contaminate the area. The importance of this is to avoid sterilization of the specimen by contamination with pHisoHex® or Zephiran®. The child is placed on a bed pan and allowed to void. A sterile specimen jar is placed in the path of the stream after it is well started and urine collected. The jar is capped, and unless plating can be accomplished in 30 minutes it should be refrigerated immediately.

In infants,¹² the procedure is the same as in older children except that either sterile plastic collection bags or sterile test tubes must be taped around the urethra. Following application, the bags or test tubes must be checked every 30 minutes for voiding. Re-preparation should be done at least every hour until urine is voided or if there is any evidence of contamination. The bag or test tube should, of course, be changed with each preparation. As soon as the urine is obtained, it is immediately poured into a sterile bottle and capped or the test tube is plugged with a fresh sterile cotton plug and sent to the laboratory for culture and colony count.

The pour plate or streak plate technique may be employed to determine quantitative cultures. While more accurate colony counts are achievable with the former method, it is more expensive in terms of time, personnel and material. Direct inoculation of urine on blood agar can be done in an office with volume-calibrated loops, resulting in overnight growth, easy isolation of the agent(s), and satisfactory quantitation with minimum expense.¹³

* Zephiran, unless sterilized and fresh, may contain pathogenic organisms and give false positive results.

The organism most commonly encountered in urinary tract infection is *Escherichia coli*. *Proteus mirabilis*, *Aerobacter aerogenes*, *enterococcus*, and *Pseudomonas aeruginosa* are seen less frequently. The most common contaminant is *Staphylococcus albus*. Staphylococci, Neisseria species, diphtheroids and "Saprophytic" bacteria should be suspected to be contaminants even if the colony count is greater than 100,000/ml. Whether they are representative of true infection is dependent on the results of repeated cultures, judgment of the quality of the technique of obtaining the culture, and correlation with other clinical information.

Microscopic examination of the uncentrifuged urine is a useful means of screening for significant bacteriuria. Neter¹⁴ states that viable bacteria can be seen in urine specimen on high power field examination if the colony count is between 10,000 to 100,000/ml. Organisms can be seen in gram-stained specimens of uncentrifuged urine in 95 per cent of children with bacterial counts of 100,000 or greater according to Pryles.¹⁵ No organisms are seen in colony counts of less than 1,000. Obviously this procedure does not supplant the quantitative culture.

Obtaining colony counts from children less than three years of age, and particularly in infants, is considerably more difficult. Depending on the investigator^{12, 16} there is a 30 to 70 per cent correlation between catheterized and clean voided specimen in children under two years of age using 1,000 colonies/ml. as the dividing line between infection and contamination. Therefore, when doubtful results are obtained, repeated culture is necessary. Catheterization or suprapubic aspiration may be necessary to confirm the diagnosis if the clinical condition warrants it. The use of suprapubic bladder aspiration was shown to be comparable in colony count to catheterized and midstream specimen by Monzon and colleagues.¹⁷

It has been well documented that pyuria is unreliable as an indication of true bacteriuria.^{18, 19} Twenty to 50 per cent of urine specimens which were sterile or grew fewer than 1,000 colonies/ml. demonstrated "5 or more WBC per HPF in uncentrifuged urine." Asymptomatic patients with pyuria should categorically not be considered infected until disease is established by bacterial culture. The presence of pyuria in either an asymptomatic or symptomatic person should be an indication for urine culture to be certain infection is not present.

Special Studies

Once the presence of urinary tract infection has been established by bacterial culture and colony count, one must search for an underlying pathologic mechanism. Since it is generally recognized that most females at some time have bladder soiling, and therefore

a single infection may not have great significance, a complete investigation is not done in girls until a second infection occurs. On the other hand, all males, and all children under the age of two years should have a diagnostic evaluation after a first infection. Although some patients will have no discernible abnormality, this cannot be assumed until complete investigations are carried out.

A complete history and physical examination are obviously necessary and may give clues as to the nature of the pathologic process. A precise, anatomic diagnosis depends on special investigations. The following are the minimum studies required: IVP, ciné voiding cystourethrogram, cystoscopy, and urethral calibration. In addition, creatinine clearance and a urine concentrating test are performed as a baseline assessment of renal function. Other studies, such as renal scan, cystometrogram, etc. may be performed if indicated by the initial workup. Retrograde pyelograms are only rarely necessary.

The IVP is the simplest test and gives valuable information as to renal function, hydronephrosis, chronic pyelonephritis, and may demonstrate lower tract disease. It should be an *intravenous* pyelogram, not an intramuscular pyelogram. Even newborn babies tolerate intravenous contrast material, and intravenous injection is practical using a scalp vein needle in a well-restrained child. It is important that the child be fasted, and in older children laxatives are indicated as in adults.

The voiding cystourethrogram is the only x-ray study which adequately demonstrates the lower urinary tract. The examination must be done while the patient is voiding in order to evaluate the bladder neck and urethra—and to properly evaluate vesicoureteral reflux. The ciné-fluoroscopic examination utilizing an image intensifier permits *functional* evaluation of the bladder, ureters and urethra. It often demonstrates changes which are missed in the static cystogram.

From a practical standpoint, it is the study most likely to give information upon which a decision can be made to correct an abnormality. Vesicoureteral reflux can only be demonstrated in this way. The rate and dynamics of ureteral emptying, bladder outlet obstruction, and urethral anomalies are clearly demonstrated. Bladder size, trabeculation, diverticula, etc. are easily shown. Complete bladder emptying is accurately assessed—even in patients with U-V reflux. In short, it is an extremely valuable examination and a “must” for evaluation of the lower urinary tract in children.

Many clinicians feel cystoscopy is of limited value in the child and perhaps unnecessary. We do not agree. Although general anesthesia is usually required, it is an examination which yields valuable information. Prior to the introduction of the cystoscope the

urethral meatus and urethra are carefully examined and calibrated with bougies à boule. This permits accurate assessment of the diameters of the urethral meatus, the mid urethra, and the bladder neck.

In the bladder, the extent of inflammation, trabeculation, the presence of foreign bodies or stones, and the dynamics of the ureteral orifices are best evaluated by cystoscopy. Panendoscopy permits evaluation of urethral abnormalities, posterior urethral valves, and the bladder neck. Most authorities agree, however, that it is not possible to make a diagnosis of bladder neck obstruction at cystoscopy.

Reliance on the IVP alone is exceedingly dangerous. Patients can have serious lower tract disorders—even with severe bilateral vesicoureteral reflux—and yet have a normal IVP. In asymptomatic patients, the voiding cystourethrogram yields approximately twice as many positive diagnoses as the IVP.^{6, 8} For this reason, the IVP, though an important study, is never an adequate evaluation by itself.

Treatment

It seems appropriate to associate specific treatment with diagnostic categories; therefore it cannot be over-emphasized that successful management depends on clarification of the morphologic and etiologic causes of the infection. Several arbitrary classifications have been proposed to permit an organized approach to management; we have found the following one most useful.

(1) *Primary acute urinary tract infection*: This group consists of patients of any age without known pre-existing bacteriuria and in whom no demonstrable anatomic or neuromuscular abnormality exists. If diagnostic studies reveal an abnormality, the patient would be assigned to the next group, (2) *Secondary acute urinary tract infection*. (3) *Asymptomatic bacteriuria of unknown duration*: This group is essentially self-defining; patients are included who have no symptoms of urinary tract infection and no physical or laboratory demonstration of urinary tract abnormality other than bacteriuria. (4) *Known chronic bacteriuria*: This group is comprised of patients with known persistent bacterial urinary tract infection, complicated by either acute exacerbations or demonstrable anatomic or neuromuscular abnormalities of the urinary tract.

In the treatment of all urinary tract infections, specific attention must be directed to fluid intake, frequent voiding with complete bladder evacuation, perineal hygiene and adjustment of urinary pH²⁰ in addition to antimicrobial drugs.

It may seem trite to mention some of these “principles” of management, but they are not non-specific nor without good reason. Increased urinary output affords dilution of infecting organisms and their

toxic products; it necessitates frequent voiding and possibly assists improvement of bladder tone. Hypo-osmolality as a consequence of water diuresis has been shown to decrease the viability of certain bacteria inhabiting the renal medulla as well as provoke a granulocytic response in the infected area.²¹ Frequent voiding with complete emptying is one method of reducing urinary stasis. Heavy bacterial colonization of the perineum can be prevented by judicious hygiene in males and females at all ages; whether this measure alone is effective in reduction of the population of bacteria in the urethra remains to be proved, although it seems likely.

These methods may represent minor inconveniences and will not be applicable to all patients with urinary tract infection, but their establishment as habit patterns is safe, easy, inexpensive, and worthwhile.

Since acid urine inhibits most bacteria, acidification of the urine is a useful adjunct in therapy. Methionine, lysine HCl, arginine HCl, ascorbic acid, thiamine HCl, and cranberry juice have been used to increase urinary hydrogen ion excretion. On the other hand, the activity of kanamycin and especially streptomycin is enhanced in an alkaline medium, and acidification is contraindicated.

Specific pharmacology of antimicrobials plays an important role in the therapy of urinary tract infections because of route of administration, metabolism of the product, duration of activity, blood, kidney, and urine levels, bacteriostatic vs. bacteriocidal activity, pH dependency, synergism or antagonism, emergence of resistant organisms, and toxicities of the drug. Some of the more useful drugs with recommended dosage schedules are listed in *Table 1*.

Regardless of the categorical assignment of the patient, the most important guides to drug therapy are the results of urine culture and the *in vitro* sensitivity testing. Otherwise appropriate antibiotic therapy cannot be chosen. Occasionally it may be necessary to start drug therapy before bacteriologic results become available, but a urine sample must be obtained before antimicrobials are given.

In *acute urinary tract infection*, whether primary or secondary (Groups 1 and 2), "sensitive" organisms are predominant, especially in younger age groups. The clinician may have a wide choice of drugs. If urinary stasis is present (Group 2), the morphologic abnormality must be corrected if antibacterial therapy is to be successful. Absorbable sulfonamides, nitrofurantoin, and nalidixic acid may result in eradication of the offending organism in patients in any of the categories, at least temporarily, but success is more likely in the acute infection and when sensitive organisms are encountered. They are usually the preferred drugs because they are less expensive than antibiotics.

It may not be possible to eliminate bacteriuria when

resistant organisms are the cause of the infection. This is especially true in the *known chronic bacteriuric* (Group 4); therefore specific antibiotic therapy should be reserved for use when clinically significant exacerbations occur. When sensitive organisms are recovered from patients in Group 4, long-term antimicrobials, and occasionally antibiotics, may prevent acute illness. Chronic administration of compounds to promote an acid urine may be extremely valuable in these patients as well as in patients with *asymptomatic bacteriuria* (Group 3). Whether these latter patients need specific therapy remains to be proved.

Duration of antibiotic treatment is certainly controversial but it appears that more clinical relapses occur in those patients treated for less than two weeks. More important, relapse or persistence of bacteriuria is far more common in those patients in whom inappropriate drugs are used. Furthermore, therapeutic success is directly related to urinary levels of bacterial inhibition, and to a lesser degree to blood inhibitory levels.²²

Follow-up

One of the most difficult concepts to convey to the parents of the asymptomatic child with urinary tract infection is the importance of prolonged and careful follow-up. It is absolutely mandatory that every child in whom a diagnosis of urinary tract infection is made have repeat urine cultures after the cessation of antibacterial therapy and periodically for an extended period of time, so that exacerbations may be promptly recognized and treated when they occur. Even in the absence of anatomic abnormality, recurrence of infection may occur. Since a large number of these patients will have no symptoms, reliance upon clinical signs, such as dysuria, back pain, and fever, is notoriously unreliable. Repeat urine cultures are the *only* way in which recurrences can reliably be detected. Careful follow-up studies²³ show that recurrences will occur in about 50 per cent of primary infections if the patients are followed for a sufficient period of time. Although most recurrences will take place in the first six to twelve months, a certain number of patients will be free of infection for as long as two or three years and then have an exacerbation.

Therefore, it is our policy to review the history, examine the patient, and obtain a urine culture on all patients with urinary tract infection two and six weeks after cessation of antibacterial therapy and every six months for the next three years. A repeat examination and urine culture are obtained at any time if there is a recurrence of signs or symptoms of urinary infection in the interim periods. For the patient who has required operative treatment or in whom long-term antibacterial therapy is indicated because of frequent recurrences, follow-up may extend indefi-

TABLE 1
CONSIDERATIONS OF DRUG THERAPY FOR URINARY TRACT
INFECTIONS IN CHILDREN

<i>Drug†</i>	<i>Daily* Dose mg/Kg</i>	<i>Route* and Frequency</i>	<i>Optimum pH</i>	<i>Usual Spectrum and Comments</i>
Ampicillin	50-100	PO IM-IV 4x/d	7	Gram positives, most <i>E. coli</i> , <i>Proteus mirabilis</i> ; destroyed by penicillinase
Cephalothin	50-100	IM-IV 4-6x/d	<7	Gram positives, most <i>E. coli</i> , <i>Proteus mirabilis</i> , some <i>Klebsiella-Aerobacter</i> sp.; resistant to penicillinase
Polymyxin B	1-3	IM-IV 3-4x/d	>7	<i>Pseudomonas</i> , <i>E. coli</i> , many <i>Klebsiella-Aerobacter</i> sp., no <i>Proteus</i> or gram positives. Toxicity demands caution
Kanamycin	10-15	IM-IV 3-4x/d	>8	Most gram negatives, some <i>Staphylococci</i> , not <i>Pseudomonas aeruginosa</i> . Need clear indication for use
Streptomycin	20-40	IM 2x/d	>8	Some gram negatives; increasing proportion of resistant organisms
Sulfonamides	100	PO-IV 3-4x/d	6-8	Most <i>E. coli</i> , some other gram negatives; toxicity excludes use in neonate
Nitrofurantoin	5-7	PO 3-4x/d	≤7	Most gram negatives, few <i>Staphylococci</i> ; Nausea and vomiting compromise use
Nalidixic acid	40-50	PO 3-4x/d	6-8	Most gram negatives, not <i>Pseudomonas</i> ; resistance appears during therapy; limited data in neonates
Tetracycline	10-50	PO IM-IV 3-4x/d	7	Many gram negatives and gram positives but dependent upon in vitro tests; absorption erratic in neonate
Chloramphenicol‡	25-75	PO IM-IV 3-4x/d	7	Many gram negatives and gram positives but dependent upon in vitro tests; 90% excretion as the inactive glucuronide

* These dosages provide generally effective urinary levels; the lower dosages and less frequent administration schedules are recommended for the newborn.

† Only the first five drugs are bactericidal.

‡ Because of serious toxicity, this drug is reserved for use after recovery of the etiologic agent and when no satisfactory alternatives are available.

nately, but three years is an absolute minimum for any patient. The normal reaction is to assume that if the child has no symptoms, all is well. This is frequently not true, and only repeat urine cultures will detect the recurrence of infection.

The successful treatment of urinary tract infection requires the talents and co-operation of the physician, surgeon, and laboratory technician and education of the patient and parents of the patient. Unless there is frank discussion of the need, purpose, and likely success of diagnostic procedures and management with those involved, even the most carefully planned program may end in failure. Early recognition and evaluation of historical and physical findings, prompt specimen collection and quantitative culturing, surgical treatment of anatomic defects, and choice of effective drugs allow a reasonable chance for amelioration of symptoms, improved and prolonged renal function, and for many patients, permanent cure.

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Tuberous Sclerosis

(Continued from Page 105)

manifestations of tuberous sclerosis, since it has been emphasized by Marshall *et al*⁴ that the possibility of tuberous sclerosis appearing in the descendants of normal relatives of severely affected patients, may be as high as one in four.

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Coeliac Angiography

—An Aid in the Diagnosis of Diseases of the Liver and Spleen

KARL A. YOUNGSTROM, M.D., and
CHUN YU, M.D., *Kansas City, Kansas**

THE PURPOSE OF THIS PAPER is to describe some clinical indications of selective celiac or hepatic arteriography with illustrative cases. Percutaneous selective celiac or hepatic arteriography is currently being widely used in the diagnosis of various liver diseases. The most satisfactory method for visualization of the celiac and the hepatic artery is the selective percutaneous retrograde catheterization by the Seldinger¹ and Odman² technique with a radiopaque polyethylene catheter. Usually a femoral arterial approach with a single catheter would be sufficient. But in order to complete the arteriographic study of the liver, catheterization of the superior mesenteric artery may also be necessary since 3.6 per cent³ of common hepatic arteries originate from the superior mesenteric artery and an aberrant hepatic artery from the superior mesenteric artery has been demonstrated in 20 per cent⁴ of the normal people. Catheterization of both celiac and superior mesenteric arteries can be done either simultaneously with double catheter technique or catheterize one after another with a single catheter. In patients with severe atherosclerosis and tortuosity of the femoral or pelvic arteries, it sometimes is impossible to advance the catheter into the abdominal aorta. The brachial arterial approach described by Bierman⁵ can then be used.

Malignant Tumor of the Liver

It has been repeatedly demonstrated that malignant tumors, whether primary or secondary, derive their blood supply from the hepatic artery.^{6, 7} The majority of primary hepatomas and most of the metastatic tumors of the liver are highly vascular. Their diagnosis by the arteriographic study depends chiefly on the demonstration of tumor blood vessels, tumor nodular strain, derangement and displacement of the intrahepatic arteries. In the primary hepatoma, arteriovenous shunts may be demonstrated, and in a vascular malignant tumor of the liver, irregular infiltration and displacement of intrahepatic arteries are the characteristic findings. The accuracy of this technique in detecting the intrahepatic mass has been reported

Selective percutaneous celiac or hepatic arteriography is a valuable roentgen examination in studying the various liver diseases. By the characteristic changes of the intrahepatic arterial pattern, most of the lesions in the liver, such as malignant tumors and cirrhosis of liver, as well as primary vascular lesions can be recognized. The splenoportal veins can also be studied by this procedure in the patient with no spleen and in other conditions which percutaneous splenic pulp puncture is contraindicated.

to be more than 90 percent.⁸ It appears to be more accurate than the blind needle liver biopsy and equally or more accurate than the radioisotope scanning. In addition, it has the advantage of differentiating malignant tumors from benign processes (*Figures 1 through 4*).

Cirrhosis of the Liver

The vascular patterns of cirrhosis of the liver varies with the anatomicopathologic stages of the disease. In advanced stage, the liver is contracted. One can see tortuosity and crowding of the intrahepatic arteries, giving rise to so-called "corkscrew" appearance⁹ in the arteriogram. When the cirrhosis is in its early stage, the liver may be enlarged. Stretching and elongation of the intrahepatic arteries are the prominent pattern. Increased vascularity and displacement of the intrahepatic arteries, as seen in patients with malignant tumor of the liver, may also be seen in the cirrhotic liver. However, it can be distinctively differentiated from those seen in malignant tumor by its absence of irregular margin and uneven caliber of the arteries which are characteristics of malignancy. The splenic artery, as result of splenomegaly, is usually dilated and tortuous, and stretching and elongation of the intrasplenic arteries can also be shown by the arteriogram (*Figures 5 through 7*).

* From the Department of Radiology, University of Kansas Medical Center.



Figure 1. Case (65-15023), selective coeliac arteriogram on a 44-year-old male who had gastric resection for adenocarcinoma 16 months previously. It shows abnormal vessels in several areas indicated by short straight arrows. Stenotic areas, large arteries suggesting tumor involvement of the arteries indicated by long curved arrow shows a stenotic area involving the first major branch of the common hepatic artery. Some extra luminal injection occurred at the tip of the catheter, which produced only some nausea for a few minutes.

Arterial Splenoportography

Splenoportography is a very valuable roentgen procedure in studying various hepatic, splenic and pancreatic diseases. The most common method is percutaneous splenic pulp puncture. It can also be done with direct injection of the contrast medium into



Figure 2. Same case, later phase of arterial filling showing abnormal architecture of tumor vessels supplying the areas of metastasis indicated by the arrows.



Figure 3. Same case as Figures 1 and 2, later phase (capillary) showing "blush" or tumor "stain" in areas of metastasis.

the splenic vein during the laparotomy or by percutaneous transhepatic approach described by Bierman.¹⁰ In the selective celiac arteriography, both the splenic and portal veins can be opacified 5-6 seconds after the beginning of injection of the contrast medium and are best seen after 10-15 seconds. The visualization of the splenoportal system can be enhanced if both celiac and superior mesenteric arteries are catheterized simultaneously¹¹ or if the tip of the catheter can be manipulated into the splenic artery selectively.¹² The advantages of arterial splenoportography are several: first, both artery and vein can be studied in



Figure 4. Same case as Figures 1 through 4 showing liver scan with radioactive Au-198 illustrating the difficulty in identifying metastasis.



Figure 5



Figure 6



Figure 7

Figure 5. Case (65-06705) of a 22-year-old white female with intermittent nausea and vomiting, massive hepatomegaly, and iron deficiency anemia showing typical liver scan of a cirrhosis using gold 198.

Figure 6. Arterial phase of arteriogram, same case as Figure 5, showing distortion of the vascular architecture by scar tissue and areas of regenerating liver tissue. Hepatic artery indicated by the short broad arrow is larger than usual, apparently compensating for deficient blood supply via portal system. The thin curved arrows indicate the stretched intrasplenic arteries from the enlargement of the spleen. The gastro-duodenal artery is displaced over the spine.

Figure 7. Shows a later arteriolar phase of the same case as Figure 5 and 6. The arrows indicate the medial border of the liver.

one examination, second this procedure can be carried out safely in patients with ascites, hypersplenism and low prothrombin. Furthermore, it is probably the most practical way to study the portal system in post-splenectomized patients and in those patients with a small contracted spleen (Figure 8).



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Figure 8. Case (66-32245) of a 58-year-old patient complaining of backache one month with weight loss. A coeliac arteriogram was done to rule out pancreatic tumor. The late phase of filming some 6-12 seconds after the simultaneous injection of 50 ml of Isopaque 300 the two catheters connected to a single syringe. The one catheter tip is in the coeliac artery and the other is in the superior mesenteric artery. Broad arrows indicate the portal vein and hepatic veins. Small slender arrows indicate the splenic vein. Considerable loss of contrast through reproduction make the demonstration considerably less evident than in the original films. The large curved arrow in lower right corner indicates a peristaltic wave in the ureter.

An Effective Splint . . .

. . . For the Arthritic or Hemiplegic Patient

DONALD L. ROSE, M.D., and

EDWARD J. NOVAK, M.D., *Kansas City, Kansas**

A SUPPORTIVE OR CORRECTIVE SPLINT is often a necessary part of the management of a patient with rheumatoid arthritis or hemiplegia. The development of joint contractures and deformities is a constant threat in these disorders. Derangements of the hand and wrist, the knee and the foot and ankle are found most frequently. The decision to construct a splint is sometimes delayed because of a number of inconveniences: expense, unwanted weight, unattractiveness, difficulty in application and the unavailability of trained personnel to make a good product. The purpose of this paper is to call attention to a simple splint which meets most of the requirements for an ideal support. Such a support should be:

- (1) Simple in construction yet adequate for its purpose.
- (2) Strong and durable but light.
- (3) Easy to apply and remove.
- (4) Designed to be trim and neat.
- (5) Attractive enough to be acceptable.
- (6) Easy to fabricate.
- (7) Flexible but unbreakable under ordinary circumstances.
- (8) Washable.
- (9) Inexpensive.
- (10) Made of nontoxic and nonsensitizing material.
- (11) Amenable to reshaping and remolding.

Plaster of Paris more nearly meets these criteria than any other single material. It is solid at all environmental temperatures. It expands slightly as it sets; hence, it takes sharp impressions. It sets quickly at room temperature. It is easy to handle, conforms readily to any surface to which it is applied, is bland and nontoxic, is inexpensive, and requires no special circumstances in its normal application. However, it is heavy and unyielding when applied in amounts necessary for strength. It is damaged by water and cannot be kept clean effectively. It wears quickly and becomes cracked easily when employed as a splint. For these undesirable reasons, plaster has never been very popular as a splint.

Enthusiasm over the newer plastic materials has

waned because most of them require such high temperatures for malleability that they do not permit direct application to the patient. They also set too slowly, are too expensive, or have a tendency to warp or curl in drying.

Several years ago, Grainger¹ described the combination of plaster of Paris and Aire-Cast[®] as a splinting material. After three years of use, this has proved so satisfactory in our experience that we feel it conforms

A supportive or corrective splint is often a necessary part of the management of a patient with rheumatoid arthritis or hemiplegia. The purpose of this paper is to call attention to a simple splint which meets most of the requirements for an ideal support.

to the majority of criteria listed above for an ideal splinting material.

The directions for making this support for the hand and wrist are as follows:

- (1) Use four layers of 6" plaster bandage sufficiently long to extend from the finger tips to the mid-forearm. Cut a cruciate opening near the junction of the distal and middle third large enough to permit the thumb to be placed through it.
- (2) Immerse in warm water for 20 to 30 seconds. Press the excess water out. Apply to the part with the thumb protruding through the hole cut for it at the preceding step.
- (3) Support the hand and wrist for three to four minutes, or until the plaster sets, in the exact position you wish it to be in subsequently. Then remove gently from the part.
- (4) Spread the medial and lateral edges of the cast slightly and trim the sides and corners of the plaster before it sets firmly. Set aside to dry for 24 hours.
- (5) Strips of 3" or 4" Aire-Cast² slightly longer than the plaster are then immersed in the solvent or acetone, using rubber gloves to handle the material. Press (but do not squeeze or wring) the

* From the Department of Physical Medicine, University of Kansas Medical Center.



Figure 1. Essential steps in construction of hand and wrist splint.

A. Six inch plaster bandage, four layers thick. Thumb opening to be cut at "+."



B. Plaster shell, trimmed.



C. Plaster covered with Aire-Cast.



D. Finished splint. Moleskin lining is optional.

Figure 1

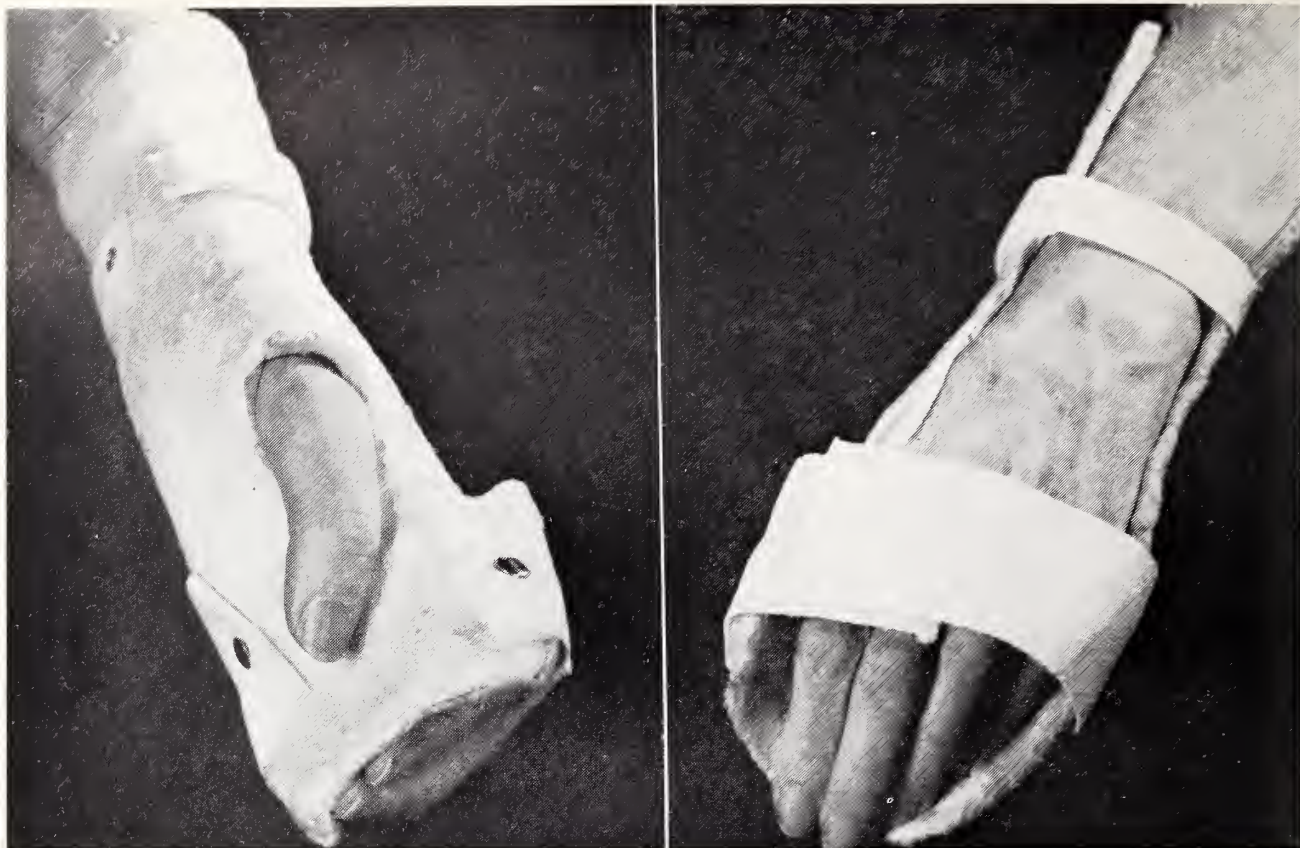


Figure 2. Finished splint in place. Hemiplegic patient.

excess solvent from the material and apply to the plaster.

- (6) Work quickly, molding the plastic over the edges and ends of the plaster. Repeatedly dampen the gloved fingers with the solvent and rub the material into the plaster surface. This not only insures adherence of the plastic to the plaster of Paris but spreads the plastic which adds to the durability of the splint.
- (7) Straps and Velcro® closures³ are then added either by gluing or riveting to the splint.
- (8) Lining is seldom needed for this splint.

The various stages in the construction of the splint for the hand are shown in *Figure 1*.

Approximate cost analysis for a splint of the type shown in *Figure 1* is as follows:

Plaster of Paris strips	\$0.25
Aire-Cast and Solvent	0.75
Time	One Hour or Less

The time factor can be reduced by the concurrent construction of several splints and with experience in handling the material.

Once finished, this support cannot be reworked. However, in all other respects it has proved very satisfactory both to the physician and to the patient.

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The Nurse Clinic—

Dynamics of Ambulatory Patient Care— New Roles for Old Disciplines

CHARLES E. LEWIS, M.D., and

BARBARA RESNIK, R.N., M.P.H., *Kansas City, Kansas**

THE NEED for more and improved ambulatory patient care services for a growing number of chronically ill patients has been documented by a variety of studies. The obvious solution, more manpower in all disciplines, is unrealistic. In all probability, the demands for health services, as presently organized, cannot be met regardless of how rapidly educational programs can be initiated or expanded. There is currently a great deal of discussion regarding the delegation of certain aspects of medical care to new types of health professionals, as a means of increasing the quantity (and quality) of total medical care available. Another obvious possibility is to re-define the roles of certain existing personnel in order to provide more comprehensive care for a larger number of patients.

In order to explore the possibilities of a more dynamic role for the nurse in ambulatory patient care, a project was initiated in the University of Kansas School of Medicine. A three year research grant was awarded to the Department of Preventive Medicine, with participation by the Departments of Nursing Education and Medicine. This project led to the establishment of a patient care program now in its second year of operation. This paper describes the functions and operation of this "Nurse Clinic."

Methodology

Patients were selected from those coming to the regular clinic by exacting medical criteria in order to insure that they were in a relatively stable phase of the natural history of their illness. Patients representing five diagnostic categories were included in the program: hypertension, arteriosclerotic heart disease, obesity, psychophysiological reaction, and arthritis. Once these patients were identified, they were grouped according to age range, sex, and race. Medical and nursing objectives were written for each patient. Half of the patients in each group, selected at random, were returned to the regular clinic. The others have received care for over a year in the nurse clinic. Prior to inclusion in the study, all patients were interviewed to obtain information regarding

their attitudes toward the roles of nurses and physicians in traditional outpatient care, their past medical history, level of health knowledge, and past history of health and illness behavior.

Certain projective tests were developed to assess the patients' relative orientation to types of personnel providing care in the clinic. Video tape recordings were made at random periods (without the nurse's

A clinic has existed for the past year at the University of Kansas Medical Center in which a nurse has provided continuing supportive care for patients with certain long-term chronic diseases. The experiences with this clinic has led to the conclusion that such care is both practical and desirable from the patients' viewpoints. It has led to the formulation of a proposal for progressive ambulatory patient care in which both physicians and nurses are patient-centered, rather than discipline-oriented.

knowledge) at the start of the patients' visits to the nurse clinic, in the middle, and at the end of the year of care in the nurse clinic. These have been analyzed by various psychological and sociological techniques. Patients have been seen intermittently by staff physicians. All charts have been reviewed daily to survey the quality of the care provided by the nurse clinic. In addition, standing orders were written which define limits within which the nurse may initiate medical care.

At the end of one year, each patient was reinterviewed and retested. The charts are being audited by various health professionals with regard to the adequacy of care rendered.

Results

Patients in the nurse clinic have made over 500 visits during the past year. Almost without exception, they overwhelmingly accepted the nurse in this role of

* From the Department of Preventive Medicine, University of Kansas Medical Center.

providing patient care. The quality of care that they received was excellent, as judged by the several mechanisms developed for medical care audit. More preventive care, in terms of routine immunizations, annual Pap smears, screening tests for diabetes, glaucoma, etc. was received by the experimental group. Most importantly, the basic medical and nursing needs of these patients were met through a program of continuous and personal care, primarily of a supportive nature. More detailed analyses from a behavioral science standpoint have indicated some fascinating changes in the interactions of the patients and the provider of medical care.

Perhaps the most interesting by-product of this project has been the development of certain basic concepts which provide a more meaningful analysis of the dynamics of ambulatory patient care. Initially, much concern was expressed by both physicians and nurses as to the role of the nurse in such a clinic, that is, whether she was "nursing" or "practicing medicine." However, patients had no difficulty in making such an interpretation. With few exceptions, patients saw this as neither a nurse substituting for a physician, or a nurse providing some new type of nursing care. Instead, they viewed the nurse clinic as providing a type of care which was uniquely suited to *their* needs. According to their evaluations they received the kind of care that they needed and wanted, *at this particular phase of their illness*.

Discussion

Since the majority of medical care services is rendered to patients outside of institutions, the needs of ambulatory patients might be divided into several phases or levels:

- (1) The acute, or intensive level, in which the status of the patient indicates the need for a complete diagnostic evaluation and prescription of therapeutic intervention.
- (2) An intermediate level, during the stable phases of illness in which patients require surveillance of their diet, activities, medication, general psychological support, and a continuing source of personal care.
- (3) The level of self-care, in which health education, health promotion, and the prevention of disease, are the goals of care.

In the past, physicians were equipped to practice at all levels, and had time to meet the needs of patients at all levels of need.

In the face of increasing costs and personnel shortages, hospitals have already accepted the concept of progressive inpatient care. Under this scheme, Intensive Care Units are utilized for the care of acutely ill patients. Routine hospital care is provided for pa-

tients who have less urgent needs. On self-care units, patients may convalesce or be housed for diagnostic evaluation procedures. The underlying principle is that patients should be grouped according to their individual needs, so that a maximum amount of professional care required is available with a minimum of wastage of facilities or manpower.

Just as inpatient care has improved the logistics of hospital care, the development of a system of *progressive ambulatory patient care* seems a logical answer to needs of patients who are cared for in noninstitutional settings. This is particularly true for patients with long-term, chronic illnesses. During the natural history of a chronic illness, there may be several exacerbations, or acute episodes during which the patient requires intensive evaluation and treatment by a physician. However, the majority of the time, when the disease process is relatively static, patient care can be rendered by a well qualified professional nurse who is aware of the biological processes which are disturbed, as well as the psychological and social aspects of care needed by the individual patient.

At the third level of self-care, or health maintenance, nurses are already providing well-child services and prenatal care for mothers, functioning in the place of physicians whose services are more acutely needed elsewhere. Models of the nurse directed well-child clinic have already been demonstrated to be acceptable and effective elsewhere in the United States.^{1, 2}

Increasing numbers of nurses are being prepared in university schools of nursing with the background which is necessary for this type of patient care. Also, physicians are being forced to focus more exclusively on diagnosis and treatment of acutely ill patients, utilizing technical and highly sophisticated procedures for the evaluation of abnormal biological processes.

There is no reason for considering ambulatory patient care at the intermediate level as being the prerogative of either the nurse or the physician. If the primary focus is on the needs of patients, rather than the needs and images of the professional disciplines, it becomes far easier to accomplish interprofessional patient care with more clearly defined guidelines for the relative distribution and allocation of professional manpower.

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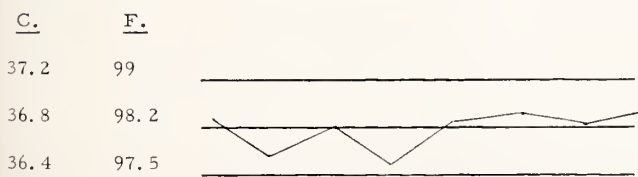
An Accurate Temperature?

—There Are Many Factors Causing Variations

JOYCE GEORGE, R.N., M.A.,* *Kansas City, Kansas*

"ARE YOU SURE that's what the patient's temperature is?" No matter who took it and under what conditions, there is a strong possibility that a second temperature recording would be at least slightly different.

Ask any night nurse: she knows that in general, patients' temperatures more often tend to be 36° C. (97° F.) by early morning than "37° C. (98.6° F.)," yet the temperatures during the day tend to be closer to 36.8° C. (98.2° F.). Another example of the variability of body temperature, of course, occurs with temperature elevations. It's generally accepted that blood pressures vary in individuals over a relatively wide scale, but less often recognized that even "normal" temperatures vary from individual to individual and from time to time in one individual. What range is "normal"? Commonly, a temperature is considered elevated if higher than about 37.6° C. (99.6° F.), thus, the implication is that "normal" is from about 36-37° C. (96-99.6° F.). An example of variability in one individual, using the same thermometer location and consecutive 5 minute readings, might appear similar to the following:



An interesting experiment is to spend about an hour taking and recording one's own temperature every five minutes. Even using the same location, withholding fluids if oral, same level of activity, etc., the variability is often amazing, especially in a room that seems slightly cool.

What are the variables that contribute to the body's temperature fluctuation? There are a number which are assumed but few with research documentation. Activity is sometimes suggested and would appear to be a factor, considering early morning patient temperatures. Many other factors may be involved: basal metabolism rate, food ingestion and starvation, specific environmental temperature affect, etc.

Some factors affecting the oral temperature reading

are often assumed but apparently cannot be documented. The matter of time and oral thermometer should be inserted has been subjected to research; an "optimum placement time of seven minutes would adequately reflect the body temperature," according to Nichols, Ruskin, Glor, and Kelly.¹ (These same research investigators also determined nine minutes as optimum for an axillary temperature.) On the other hand, evidently there are a number of unknown factors at this time, so far as research is concerned. If a

Since the "normal" range of temperature varies, both from time to time and from location to location, the routine temperature readings in hospitals may not be worthwhile. Providing the nursing staff observe and check for temperature elevations when indicated, it appears that this would be more profitable to all concerned: the physician, nursing staff, and patients.

person has drunk a cold fluid, how long is it before an "accurate" reading can be obtained? Conversely, after ingestion of a hot fluid, how long is it before an "accurate" reading can be obtained? Is it less than a minute? Does smoking raise the oral temperature?

More important, however, is that the body temperature is not uniform. Try taking an oral temperature and axilla temperature simultaneously, or even more fun, an oral temperature and one between the toes when the toes are cool! There is much controversy among doctors and nurses regarding location of temperature readings. The commonly stated "fact" that the oral temperature is "one degree lower than the rectal temperature" has been shown to be false. In a study of 60,000 Ceylonese, it was found that the oral temperature may be the same as the rectal or as much as two degrees Fahrenheit lower. There was a similar number of individual differences between the range of 0 to 2 degrees Fahrenheit.² In other words, if a patient's temperature rectally is 37° C. (98.6° F.), his oral temperature may be anywhere from 36-37° C. (96.8-98.6° F.). The difference between axilla, and the oral and rectal locations appears to be similar.³

* Assistant Professor, Department of Nursing Education, University of Kansas School of Medicine.

In a survey of 60 patients' oral and axilla temperatures, the range of difference was also approximately 0-1° C. (0-2° F.).⁴ It appears that no matter which of the three locations are used, as much as about 1° C. (2° F.) difference may exist. This raises the question, at what C. (F.) level should an "elevated" temperature be designated?

Another factor in temperature readings of less variability is the differences in thermometer calibrations. Depending on the manufacturer to some extent, variation in thermometers up to .01° C. (.5° F.) may exist, and occasionally a greater difference.⁵

Obviously, the purpose of temperature recordings is to determine elevations, preferably early, so that medical treatment may be initiated. If this is the *primary* goal, then it appears that there are at least two means to this end. One is to take frequent temperature recordings. Another would omit frequent temperature recordings and depend on the nursing staff's early detection of temperature elevations through observation, patient complaints of "feeling warm," and recognition of situations where checking for an elevated temperature is indicated.

The number of nursing staff hours spent taking temperatures has been examined. According to the findings reported by Canetto on 101 ambulatory patients, 2,290 temperatures were taken during the period of a month. Of these, 97 per cent (2,234) were within normal range. "Only 56 of the temperatures reviewed were considered elevated and 36 [64 per cent] of these elevations occurred in four patients."⁶ In this same study, it was found that the highest frequency of elevations were recorded at 6:00 p.m. The author recommends that temperatures be taken on ambulatory patients two times a day for a few days and, if these are normal, the routine temperature be changed to once a day at 6:00 p.m.

When taking routine temperatures from two to six times a 24-hour day, the great majority of the temperatures are not elevated; hence, much time is spent in an activity that produces nothing so far as pertinent medical information is concerned. According to the Canetto study, this nursing staff time in the U. S. can amount into the million dollar range of wasted time, using \$1.50 an hour and the time consumed for taking and recording these temperatures. Further, waking patients at an early hour, only to find that the temperature is normal and the nurse can comfortably say to the physician that the patient is "O.K." seems a bit absurd. An observant nursing staff can check for a temperature elevation when indicated. If the nursing staff is deficient in number, making arbitrary routine temperature recordings to ensure that the nursing staff obtain elevations no doubt decreases other patient care activities.

Summary

- (1) Body temperature is variable both among temperature recording locations and during the twenty-four hour day.
- (2) The difference between oral, rectal, and axillary temperatures may vary up to 1° C. (2° F.).
- (3) The time required for measurement within .2° F. with standard thermometers may be from seven to nine minutes.
- (4) Routine measurement of temperatures on ambulatory patients is probably adequate if taken daily at 6:00 p.m.
- (5) Further study is indicated regarding routine temperature recordings and ability of nursing staff to take temperatures when indicated.
- (6) Observations of other symptoms and signs relevant to the possibility of an elevated temperature may be as pertinent as the temperature level in reporting to the physician.

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Coeliac Angiography

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Philosophical or Physiological?

The Physiological Process of Dying— A Physiologist Looks at Death

E. B. BROWN, JR., Ph.D.,* *Kansas City, Kansas*

A CASUAL REVIEW of what has been written on death reveals very quickly that philosophers and writers, rather than scientists, have had the most to say on this subject. Even they, however, have found it to be a very difficult subject with which to deal. I quote from the introduction to an essay "On Death" by Milton Mayer in the 1965 edition of *The Great Ideas Today*, published by the Encyclopedia Britannica, Inc.

The paper-thin bibliography of the subject is eloquent testimony to the invincibility of our ignorance. We do not know what to say about Death because we do not know what to think about it, and we do not know what to think about it because we do not know what it is. Of all the ideas Mark Twain says the Greeks stole from us, this is the one they stole entire. It is the only area of human wonderment in which there is intellectual despair, all the deeper in view of the stupendous advances that have been made in medicine and its related fields. . . . We may acknowledge the validity of the modern physiologist's assertion that "it is impossible to define life without death"; but death is impossible to describe, much less define. The enigma of the one enigmatizes the other. Here is the most important of all the facts of life, and we cannot begin a discussion of it. And because we cannot begin a discussion of it, our discussion of life is balked.

If we take literally what Mr. Mayer has said, then this discussion has already ended before it starts. I do not believe that this is quite true, but there is a clear warning that any discussion of this subject can very easily leave the realm of scientific information, if any, and proceed into the area of philosophy or theology. I shall attempt in the initial parts of this discussion to stick to what little information we have about physiological processes, and then perhaps in the latter part to indulge myself a bit in some philosophical expressions, hopefully based on these earlier observations.

As physiologists we are necessarily concerned with life. The key to understanding the concern of physiologists is the word "Function." Only *living* cells,

tissues, organs, systems, and organisms can be studied when function is the objective. When the material being studied dies, the physiologist loses interest, and this may be the reason physiologists have given very little attention to the subject of death. The process, however, by which the transition from the living to the dead state takes place might very well be a subject of interest to persons studying function. At any rate, we are brought very quickly to the problem of defining *life* and *death*, or *living* and *dead*. In spite of the glib manner in which the characteristics of living as opposed to nonliving material are outlined in elementary courses in biology, this distinction is not always an easy one to make. Modern biology rejects the notion that there is anything different about the atoms of which living material is composed compared with nonliving. However, chemical analysis usually requires the death of the tissue, and the problem of knowing precisely the arrangement of atoms in the living cell is still an unsolved one. It seems likely that the difference between living and nonliving *is* in the arrangement of atoms making up certain molecules in the cell. When this necessary arrangement is irreversibly disrupted, the cell cannot function *properly* or at all, and we say the cell is dead.

Note the words "irreversibly" and "properly" in the above statement. Cells may have their function interrupted temporarily by drugs such as anesthetics, by anoxia, or by cold, and later return to normal functioning. The point at which irreversibility occurs is obviously the critical one and it is not always easily determined.

We have spoken above of cells, tissues, organs, systems, and organisms; however our definition of death dealt with the cell. Can this definition be extended to include the more complex levels of organization of cells into tissues, tissues into organs, organs into systems, and systems into organisms? I believe that it can. If cellular death is a permanent disruption of an arrangement of atoms and molecules necessary for the proper functioning of the cell, then tissue death would be a permanent disruption of this necessary arrangement by which cells function harmoniously and synchronously as a tissue, and so on for higher levels. By this definition death can take place at a

* Department of Physiology, University of Kansas Medical Center.

Read before the Postgraduate Symposium, "Facing Death," on November 3 and 4, 1966, at the University of Kansas Medical Center.

higher level of organization with life continuing, at least temporarily, at a lower level and certainly the reverse is true. A tissue or an organ may be destroyed by a disease process and removed from the body without producing the death of the organism.

I can illustrate this idea with an experience that I had a number of years ago in a physiology class for student nurses. One of the younger instructors in the department came to my office and asked if I would come to the laboratory and speak to some of the nursing students, one in particular, who was disturbed by the fact that she thought we were discarding live animals for incineration. The students that day were using frogs for an experiment on skeletal muscle. When this particular young lady had finished with the experiment she came to the instructor and asked what she should do with the remains of the frog. He told her simply to drop it in the stone jar at the end of the desk. She was incensed at this callousness since, in her judgment, the frog was still alive. Now the frogs used for this experiment had been double pithed; that is, the entire central nervous system had been destroyed. It was perfectly true that some of the tissues of this animal were still functioning as was obvious from the fact that the skeletal muscle which her group had been using was responding to stimulation and showing evidence of being alive. It was also true that if the viscera had been exposed, the heart in this animal would have been seen to be still beating. Therefore it was not particularly strange that this student should have been somewhat concerned about the state of the animal. It was pointed out to her that she could cut the heart out, proceed to chop the animal into any number of pieces and that the various segments or sections of tissues remaining including the heart would for several hours still show evidences of the individual type of function of which they were capable. In other words, the important point was that the organism as such was dead. There was no earthly possibility for the intact animal being restored to normal function, and from that standpoint the animal was dead. Furthermore, the animal had been rendered completely incapable of any sensation, any voluntary action, or of receiving any pain. I recall hearing Professor Heymans, the man who received the Nobel prize for his work in elucidating the function of the carotid and aortic bodies, make a statement one day in a seminar that cells in ground hamburger meat were still alive after several days in a refrigerator. Undoubtedly, what he meant was that such cells could be warmed to 38° and could be shown to be still consuming oxygen and producing CO₂. Certainly the cow from which these cells were taken was dead. As a matter-of-fact, this property of cells and tissues to survive for long periods of time, detached from the parent organism, is taken advantage of in

our tissue banks such as blood banks, bone banks, cornea banks, etc.

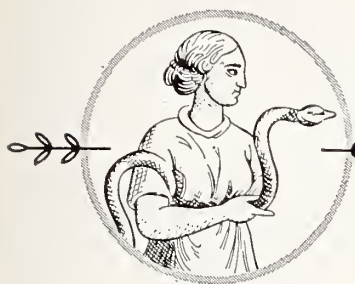
The fact that one part of an animal may be alive while another part is "dead" is recognized every day in the practice of medicine. A useless eye or appendage is amputated or a diseased organ is removed. A further extension of this same idea is seen in the fact that a part of the body may not die in the sense that it ceases metabolizing, but it may become useless in terms of its normal function.

It is interesting to note that the definition of "death" as given in the medical dictionary is the following. "The apparent extinction of life as manifested by absence of heart beat and respiration." The literary dictionary on the other hand gives this definition for dead: "Marked by absence of sensation of consciousness: without feeling, spirit, or vitality." Obviously the literary dictionary gives a broader definition of the word as we commonly use it in expressions such as "dead to the world," "dead on his feet," "deadbeat," etc. Nevertheless, there is a sense in which the latter definition has considerable importance and impact for the medical profession, and this importance is increasing every year with the technical advances being made to maintain "life" with machines which can simulate the function of organs of the body. We now have artificial hearts, artificial kidneys, artificial lungs, and so on.

At this point I would like to leave the realm of scientific fact and make a few observations which have only the validity of personal opinion and judgment. This whole complex of facts and technical advances brings to the fore a question with which medical ethics in my opinion has not always been concerned, namely, the quality of life. It seems to me that in the development of Western medicine, a fundamental ethic has been that life (as classically defined) and its continuation is an unqualified and unmitigated good under any and all circumstances. In the last half of the 20th century this ethic is coming under scrutiny and is being challenged. The fact that respiration and circulation may be maintained in the face of death of other parts of the body means that the brain may be dead while life in the medical dictionary sense is maintained. The very real question of whether or not a man is alive or dead when his brain has permanently ceased functioning must be faced. As in the case of the pithed frog, the physiologist would answer "no" to this question.

After this paper was written my attention was called to a recent article with the title "When Is a Patient Dead?—A Modern Doctor's Dilemma" which appeared in the September-October, 1966, number of *Hospital Life*. This article points out that the French Academy of Medicine has given particular attention

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Medical HISTORY

An Account of the University of Kansas School of Medicine

RALPH H. MAJOR, M.D., Kansas City, Kansas

(Continued from February)

Near the close of the war, the Medical School suffered an irreparable loss in the death of Dr. Logan Clendening in 1945. Logan had been in bad health for several years, and the outbreak of World War II brought recurring periods of despondency. When the Germans raided London and wrought so much destruction of historical landmarks and cultural shrines, Logan was thrown into a mood of deep depression, with the same reaction when bombs destroyed churches, museums, libraries, and art galleries in Germany. The Clendenings had no children, but Logan suffered vicariously with all of his friends who had sons in the service.

After Clendening's tragic death, it was found that he had willed his library of medical history to the Medical School and the residue of his estate for the purchase of further books. This priceless collection was one of the outstanding private libraries of medical history in the country and had been assembled over a period of years by Dr. and Mrs. Clendening. The role played by Mrs. Clendening in Logan's success was a very important one. She shared his interests and his labors—doing research for him, assembling data, criticizing and improving his diction, typing his articles, reading and correcting proof. But even more, she shared his enthusiasm for medical history, his love of fine books and fine bindings, and herself bought a very large number of the fine books in his collection, which she presented to him on the occasion of various anniversaries.

This is the eleventh of approximately twelve installments of Dr. Major's account of the early days of the University of Kansas School of Medicine.

Following Logan's death, Mrs. Clendening, in addition to making a very substantial gift to the Library of the History of Medicine, established the Logan Clendening Lectures on the History of Medicine. The lecturers up to present, Dr. John Fulton of New Haven, Dr. Chauncey Leake of Galveston, Dr. George Sarton of Boston, Dr. Elmer Belt of Los Angeles, Dr. Douglas Guthrie of Edinburgh, Scotland, and Dr. Esmond R. Long of Philadelphia, show the high quality of the lectures that have been given.

On April 20, 1947, the memorial fountain to Dr. Clendening was dedicated. This fountain, erected by his friends, was inscribed with a favorite phrase of Clendening's—"Life is short and the art is long," the first aphorism of Hippocrates. Mr. Henry J. Haskell, editor of the *Kansas City Star*, delivered the dedicatory address. "It is appropriate," said Mr. Haskell,

that the memorial to Logan Clendening should take the form of a fountain. A fountain is no inert thing. It is full of life and interest, the movement of water suggests sparkle and animation—the qualities that were so conspicuous a part of Logan's endowment. The setting is appropriate. Any memorial to Dr. Clendening belongs in this great medical center, which so absorbed his interest and to which he devoted so large a part of his life.

After Clendening's death, I was asked to take over the department of the history of medicine in addition to my other duties. I called on my colleagues for assistance, and the response was most generous. Dr. Orr agreed to lecture on the history of surgery, Dr. Guffey on obstetrics, Dr. Delp and Dr. Hashinger on medicine, Dr. Thor Jager of Wichita on pathol-

ogy, and Dr. Latimer and Dr. Woodward came down from Lawrence to lecture respectively on the history of anatomy and on the history of physiology. Dr. Ralph Edwards was asked to lecture on the history of dentistry and immediately began his historical studies with the same energy and enthusiasm that characterizes his professional activities. He has secured many valuable items for the library and the museum and in 1950 was instrumental in obtaining the valuable Bumgardner collection of books and periodicals relating to dental anesthesia. Dr. Edward H. Skinner, the well-known radiologist, agreed to continue his lectures on the history of radiology. Ned Skinner was a pioneer in radiology, beginning his study of this specialty only a few years after Röntgen's epochal discovery. He had actually lived through and played a role in creating the history of radiology. Ned Skinner threw himself into this work with all his characteristic energy and enthusiasm. With the years, his interest and love for medical history deepened. In 1951, he presented his notable collection of books on radiology to the Library of the History of Medicine, and his interest in the library was only extinguished by his death in 1953. After his death, Mrs. Skinner and his daughter, Mrs. Joseph Farrow, presented a portrait of Dr. Skinner (Figure 54) which hangs in the lobby of the Library. When his will was probated, it was found to contain a most liberal legacy to the book fund of the library.

I personally think this plan of asking my colleagues to assist with the lectures in the history of medicine is an excellent one. While a professional historian may look down on all of us as amateurs, I am convinced that Dr. Orr, for instance, who has lived and breathed surgery for 40 years, can appreciate and describe the history of surgery, with its marvelous advances, far better than a professional historian who has never felt the grave responsibility of a major surgical operation and whose knowledge of surgery has been gained exclusively in the library.

After my retirement as chairman of the department of internal medicine, I was appointed chairman of the department of the history of medicine. Here I have labored with some success, I hope, to increase the interest of the student body, the staff, and the faculty in the history of medicine. To further this cause, I have written *A History of Medicine*, which was published in 1954. Also, we have established, on the initiative of Dr. Delp, the Hixon Hour, a monthly gathering of the medical staff and their friends to listen to lectures, followed by discussions, on various topics in the history of medicine. These informal talks, followed by refreshments, have proved very popular.

While I am quite aware that a knowledge of history may not increase a doctor's skill or his income,



Figure 54. Dr. Edward H. Skinner

yet, after all, he is presumably an educated man, usually a leader in his community. We would not think very highly of a clergyman who had never heard of St. Paul, Martin Luther, or St. Francis. Similarly, an educated public expects a physician to know something of Hippocrates, Vesalius, or William Harvey. The more a doctor reads medical history, the more he appreciates his own profession and its achievements. He also learns a certain humility and, as I emphasize to students, that a lot of smart men lived before 1950. I believe firmly that more attention should be paid to the history of science. The history of the microscope, the discoveries of Pasteur, Koch, Lister, Ehrlich, and the history of anesthesia are just as interesting and certainly more profitable reading than the War of the Roses or the numerous dynastic wars of Europe. Students, when exposed to medical history seem, as a rule, to find it interesting. The Red Letter Day of our department was in May, 1952, when the American Association of the History of Medicine met as guests of the department of the history of medicine. I had the honor of being the president of this association at that time, and the meeting drew a group of notable doctors, not merely in the history of medicine but in other fields as well.

With the successful conclusion of World War II, the men returned one by one. Fortunately, there was no loss of life among members of the Unit although

they had not spared themselves or been spared. The First World War had been followed by a surge of new ideas and an urge to build better and bigger medical schools and hospitals. The Second World War provided like impetus. The "grapevine" whispered that the federal and state legislatures were going to be generous to the medical schools, without whose training the doctors could never have accomplished what they did on the battlefield and in the hospital.

Chancellor Malott visited the Medical School very frequently, often weekly or bi-weekly, talked to the members of the faculty in their offices, listened to their problems, and asked for their suggestions. One day in 1948, I met him in the hall quite by chance, and he took me aside. "Dr. Wahl," he said, "has wanted to resign as dean ever since I have been chancellor, and he really has taken the punishment long enough. So I have been looking around for a new dean for months. This week I found him, right under my nose!"

"Who?" I asked incredulously.

"Franklin Murphy, of course" (*Figure 55*).

I was still a little incredulous. Why would a physician with the brilliant record that Franklin had already made, medical scholar, excellent teacher, with much first class medical research to his credit, already

gaining distinction as a cardiologist, wish to become a dean? Perhaps I had become allergic to such posts after seeing Sudler finally washed overboard and Wahl riding through a storm every few months for 20 years. Well, perhaps Wahl should be brought ashore and a younger and hardier soul be turned out on the rough seas.

Seeing my hesitation, the Chancellor asked me flatly if I were opposed.

"Of course not. But I don't believe you can get him," I answered.

"Leave that to me," retorted the Chancellor.

On July 1, 1948, Franklin D. Murphy was appointed Dean of the Medical School. His amazingly successful record as dean is of such recent date as not to be past, but contemporary history. Under his vigorous leadership, there was a marked expansion of the physical facilities. A new Residence Hall for the Nurses, the completion of Ward D, the new operating suite, the addition of two floors to the Clinic Building, and the new Medical Sciences Building were all completed during the three short years he served as dean. This period also marked an increase in faculty members and students, as well as extension of the scope of postgraduate instruction and instruction in dietetics, physical medicine, occupational therapy, x-ray technology, and laboratory technology. A department of hearing and speech was established under the direction of Dr. LaVerne Spake, whose work in this field has brought him national recognition. Spake's name first appears in the catalogue for 1926-28 as clinical assistant, and then, by slow and gradual stages, he was promoted through the various academic ranks, becoming clinical professor in 1948. Dr. Spake served with distinction from January, 1943 to 1955 as a member of the Board of Regents, a post of honor and trust.

When, in 1948, Dr. H. R. Wahl resigned as dean, he had served in this capacity 24 years—quite a record, considering what a hazardous existence the dean of the medical school in a state university leads. An appreciative article in the press soon after Dr. Wahl's retirement described him as sitting in his laboratory diagnosing slides by the thousands and instilling the principles of pathologic anatomy into students and doctors, generation by generation, until, now, practically all the pathologists in Greater Kansas City and for miles around had learned their skill from Wahl. It has also been pointed out that Wahl was as unique as the University of Kansas Medical School, which had three campuses—Wahl had three jobs simultaneously, Dean of the Medical School, Professor of Pathology, and Superintendent of the Hospital. For 20 years, his principal recreation was a change of scene—changing around from one job to the other.

Yet this description remains inadequate. Augustus



Figure 55. Chancellor Franklin D. Murphy

boasted that he had found Rome a city of brick and left it one of marble. Wahl found one building on the new site and left ten! Wahl, the builder, has been perhaps submerged when discussing his achievements.

The department of physical therapy and of occupational therapy, which plays such an important role in the Medical Center today, had, like many other departments, a humble beginning. When the new Bell Memorial Hospital was built, a group of rooms were set aside in the basement floor for physical therapy. Here were installed tubs, douches, shower baths, paraffin baths, a diathermy apparatus, tables for massage, ovens for producing heat—the standard equipment found in the institutes for physical therapy, albeit on a modest scale. This department, under the direction of nurses trained in physical therapy, was deservedly popular and was unquestionably an important adjunct in the treatment of disease. There still lingered in the minds of some doctors the remembrance of an era when blue light and red light and yellow light treatments with various types of electrical currents had had a certain vogue and many of their progenitors had been either unstable faddists or downright quacks. The serious students of physical therapy were often confused by the public and by some physicians with followers of the Abrams' electrotonic reactions or Wilshire's "Magic Horse Collar," both presumably electrical modes of healing. Physical therapy itself was actually as old, if not older, than the Asklepieia, or temples of healing, of the ancient Greeks and, finally after more than a millenium of silence and neglect, was slowly but surely forming itself upon the consciousness of the medical profession as an important method of healing. The First World War had shown its value in a dramatic fashion, later re-emphasized by experience in the Second World War.

This department, however, needed a physician properly trained in determining the indications for physical therapy and the most effective type of treatment indicated. This problem was solved by the appointment of Dr. Gordon Martin in 1945. Under his guidance, the department made rapid strides forward and took its rightful place as an important department in the Hospital and Medical School. The catalogue for 1945-46 shows for the first time a department of physical medicine, listing a course in physical therapy. Residencies were established as well as a training school for physical therapists, the graduates of which are increasing its prestige. With the appointment of Dr. Donald Rose in 1948 as successor to Dr. Martin, the training school has continued to advance in the respect of the staff and in the affection of the patients.

The department of public health and preventive

medicine first appears in the catalogue of 1914 with Dr. S. J. Crumbine as professor of preventive medicine and apparently as the sole instructor. Three years later, Dr. Crumbine had the assistance of two associate professors, and the catalogue from 1921-22-23 carries the names of C. I. Reed as associate professor and Louis B. Gloyne as instructor. Following the resignation of Dr. Crumbine, the circumstances of which have been related earlier, Dr. Gloyne, who had been made assistant professor in 1922, was made head of the department. Louis Gloyne was one of our graduates and a most loyal and enthusiastic alumnus. In addition to filling the chair of public health at the Medical School, Louis filled another chair, which was often much more uncomfortable—that of Health Commissioner of Kansas City, Kansas. I always have the same kind of sympathy for health commissioners that I have for medical deans since both seem to be favorite targets for disgruntled doctors.

Louis Gloyne was an outstanding health commissioner. In addition to carrying out many important measures to improve sanitation, he brought to the attention of the public the great importance of health measures in making a city more attractive and more



Figure 56. Dr. Ralph Major



Figure 57. Dr. Hugh Dwyer

prosperous as a place in which to live and to work. Gloyne reigned as head of the department in somewhat splendid isolation from 1924 until 1940, with an interlude of two years (1936 to 1938), when the chairman was Earle Brown.

In 1941, Dr. Hugh Dwyer was appointed acting head and, in 1944, head of the department. Hugh Dwyer was one of the best qualified men for this position the Medical School ever had. Originally a graduate in veterinary medicine, Hugh decided to become a physician, studied at Tulane, where he received the degree of M.D. and later the degree of D.P.H. He joined the faculty of the Medical School as instructor in pediatrics, soon became a leader in this field and a much sought-after consultant. In 1940, he was appointed Public Health Director of Kansas City, Missouri, and held this post more than 20 years. A man of great charm, a clear thinker, an interesting speaker, he was naturally an excellent teacher (*Figure 57*).

In 1946, Dr. Dwyer was succeeded by Dr. Edward G. McGavran, who accepted the position on a full-time basis. Dr. McGavran remained only one year and resigned to become Dean of the School of Public Health of the University of North Carolina. His successor was Dr. Eldred Thiehoff, who resigned his position as City Health Commissioner of Peoria, Illinois, to join the Medical School faculty.

(To Be Concluded Next Month)

GALLEY PROOF CORRECTIONS

There is sometimes a misunderstanding about changes in an article on the galley proofs and the reluctance of the JOURNAL to make extensive alterations. The reason for this is quite simple and easily understood when one knows all the facts. The article has already been set in type. To make extensive changes requires that the typesetting be done over, at an additional cost which may even exceed the original, because it is slower work to fit pieces together than to set an entire article in type. It is also obvious, when one stops to think about it, that an alteration in the first few lines of a paragraph will probably make it necessary to reset the entire paragraph. This, of course, increases greatly the cost of printing and should be avoided as much as possible. The galley proof is for correction of errors, and a rewriting of the article should be done on the original copy before it is submitted for publication.

Cornelius Ambrose Logan (1832-1899)

A Study of the Kansas Physician, Diplomat and Writer

PHOEBE PECK,* *Kansas City, Kansas*

WE REACHED THE NORTH BANK of the Kansas River, opposite Lawrence, as the small hours of the morning were coming on, and found the deep silence of the vicinity oppressive and foreboding.

So begins an account by a near witness of Quantrill's raid upon Lawrence, Kansas, on August 21, 1863. That witness was Dr. C. A. Logan. When the mayor of Leavenworth sent out a call for help, he was one to whom an appeal was made; and he and his colleague, Dr. Tiffin Sinks, left immediately for the stricken area. Logan continued:

Every man of prominence was well known to the raiders, and his death determined upon by prearrangement.

And Logan ended his report by saying that he had been ambushed himself and

made a target of by concealed marksmen upon more than one occasion in the early free-State days, and he therefore entertained some strong feelings of his own about assassins and such things; but these were entirely forgotten when, in the streets and houses of the faithful but ill-fated city of Lawrence, he viewed the calm faces of slain martyrs, and helped to bind up the wounds of still-living victims of a crime as utterly useless, in any sense, as it was revolting to every sentiment of humanity and lawful warfare.

Who then was Dr. Logan? This paper is an attempt to trace the medical, diplomatic and literary activities of that physician of Leavenworth, Kansas (*Figure 1*).

Cornelius Ambrose Logan was born in Deerfield, Massachusetts, on August 24, 1832. His father was Cornelius Ambrosius Logan, a well known comedian and dramatist, a manager and writer of plays, whose name as an actor was frequently to be found on the playbills of Cincinnati, Albany and New York. There were four children—Logan and three sisters. The sisters were to become prominent in the fields of acting and lecturing.

The family moved in 1840 to Cincinnati, Ohio, where young Logan received his education. He studied medicine in 1849 under Dr. John T. Shotwell, one-

time partner of Daniel Drake and later professor of anatomy at the Medical College of Ohio in Cincinnati; and in 1850 under Dr. R. D. Mussey, professor of surgery at the same school. He graduated in 1853 from the Miami Medical College, with the degree of M.D. His thesis was on "Oblique Inguinal Hernia." He was selected with one other from the class of five to be resident house physician at St. John's Hospital in Cincinnati and assistant in chemistry at Miami.

The young doctor was married in 1854 to Zoe

What prompted this study was a sentence in the *Dictionary of American Biography*—"There is no biography of Logan and such sketches as appear in encyclopedias are inaccurate." This accounts in part for the length of the article and the numerous notes and references.

Shaw. Later they moved to Indiana and, after a year, came to Leavenworth, Kansas, about 1856. Here Logan immediately became one of the city's leading citizens. He organized in 1859 the first grand lodge of Odd Fellows in Kansas and was subsequently grand master, grand chief patriarch, and grand sire. When the Leavenworth Merchantile Library was re-organized, he became a member of the board. Under the board's management, the library so increased its holdings that it soon became the largest in the state. During the Civil War, he was commissioned surgeon of the first regiment of the Kansas state militia; and he took part in the Battle of Westport (October 1864).

In 1863 he and his wife were confirmed at Fort Leavenworth into the Episcopal Church by the Bishop of Iowa. "Out of personal regard," recorded the Fort chaplain, who had founded the church in Leavenworth, "and in consideration of our former relations [they] came up from Leavenworth City to receive Confirmation."

Logan was largely instrumental in developing the coal fields of northern Kansas. Going to Washington, he succeeded in securing a franchise which gave a

* Department of History of Medicine, University of Kansas School of Medicine.



Figure 1. Dr. Cornelius Ambrose Logan. Courtesy of Mr. Charles L. Waterous.

newly organized company the right to purchase land on the Fort Leavenworth Reservation and to mine the coal therein. The result was a great output of cheap fuel, giving impetus to manufacturing.

Meanwhile, he pursued actively his profession of medicine. Of him it was to be said—"No physician in the state's history has left the stamp of his personality on so many facets of the practice of medicine in Kansas as Dr. Logan."

As a Physician

In August, 1858, Logan became one of the founders of the Leavenworth Medical and Surgical Association (later the Leavenworth Medico-Chirurgical Society), the first medical society in Kansas. At a

meeting in April, 1867, at which time he was president, he drew the attention of its members to the clinical thermometer and exhibited one. His opinion was that this instrument would become of great importance in physical diagnosis. (Note that only one year before, the thermometer was first mentioned in the Harvard Catalogue.)

Before the same Society the next month, Logan commented on his experiences in the use of the hypodermic syringe. (The use of this instrument had been reported in the *Dublin Quarterly Journal* six years previously.) However, Logan found that the nausea resulting from giving medication with this instrument was a serious objection to its general employment. At another meeting in December, discussion arose regarding the use of chloroform. Logan thought one danger arose from too thoroughly excluding the atmospheric air. (This was the year the Junker's chloroform inhaler appeared.)

Apparently Logan did not picture himself in the role of a family physician. At one point when he was pleading for more subscribers to his journal, he remarked that, if he were in the private ranks of the profession, he would consider it necessary to subscribe. However, he was consulted for all sorts of conditions. Specific mention is made in the record that he and Sinks pronounced plague in a boy who had died in the Delaware Mission School. He reported on cases of tertian ague, obstructed labor, fluid accumulation in the female abdomen, puerperal fever, infant feeding, acute phthisis, cholera, pulmonary calculus. For his tuberculous patients, he found particularly helpful the climate of Kansas with its altitude of 900 feet and its dry, invigorating atmosphere.

To Logan, medicine was "both a science and an art. It is one thing to study it as a science and quite another to practice it as an art." He had no use for physicians who looked upon their profession as a business, no use for the then prevailing policy of the County Board to let the doctoring of the prisoners and poor to the lowest bidder. He opposed the prepayment plan—"The practice of taking families for treatment by the year, has been demonstrated to be so thoroughly bad in its influence, and so pernicious in its operation, as to have caused its almost universal abandonment by all reputable physicians."

Concerning female physicians, Logan's opinion changed during the years. In 1867, the editor wrote that he hoped never to see the day when the female character be so unsexed as to fit it for the disgusting duties of one in the healing art. Five years later, he was present at the State Society's meeting when there was elected unanimously to membership a female doctor—the first so honored by a state medical society in the country.

In April, 1866, the Kansas Medical Society was

reorganized with Logan as president. Subsequently he served on the Board of Censors and on various committees—on obstetrics, gynecology, rheumatism, uterine hemorrhage, publications, arrangements. Also, he served several times as delegate to the American Medical Association meetings. In 1867, the Society appointed Logan, with Root and Sinks, to the committee for preparing a draft of a law for the registration of marriages, births and deaths in Kansas. The proposed law passed the State Senate but was not reached in the House.

In his retiring presidential address to the State Medical Society, Logan pointed to two of the Society's functions—to regularize professional ethics and with this to abolish the multifarious operations of widespread quackery; and to attempt to cure established disease and comprehend the methods of averting such. Members of the Society asked for an organ, and, in June 1867, Logan founded, with Sinks, the *Leavenworth Medical Herald*—the first medical journal in Kansas (Figure 2).

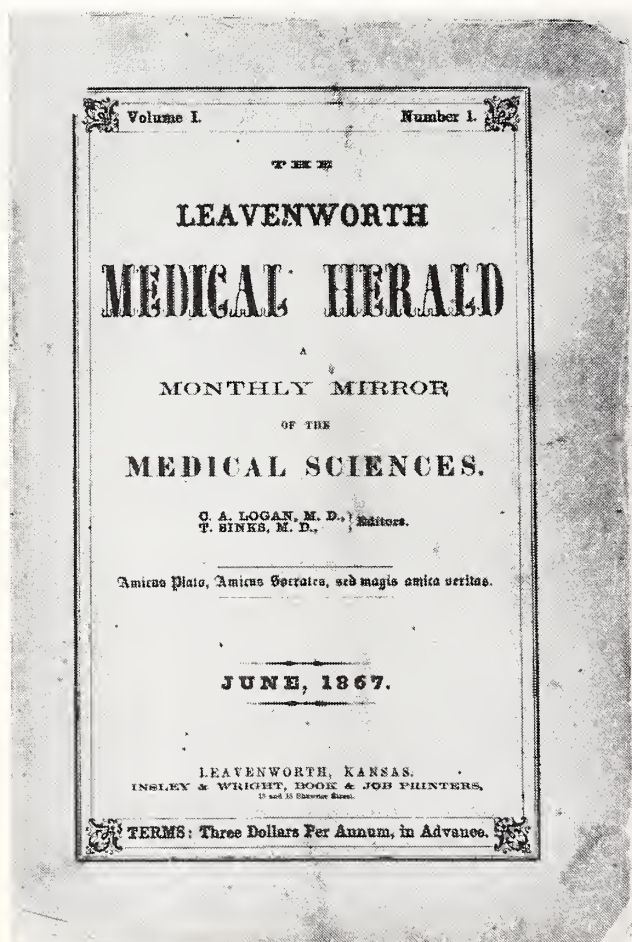


Figure 2. First issue of Kansas' first medical journal.

As an Editor and Writer

Often at first the editors would lament that the journal was being published at a pecuniary loss. But

Logan persisted—"We launch our bark upon the depths of—to us—untried waters." The Society complimented and endorsed the results. The new journal published original articles and abstracts of important articles appearing in other publications, domestic and foreign. For example, in the February, 1868, issue, Logan extracted entirely from the *Lancet* the article by Joseph Lister, "On the antiseptic principles in the practice of surgery" (March 4, 1867). This he did because it was a full résumé of a practice now being fully tested in the European hospitals. The journal contained also announcements of scientific meetings, with minutes of the proceedings, book reviews, and notes from a Paris correspondent.

But more important to the senior editor, the journal was the means through which he spoke out to his colleagues on not two or three subjects but on many. When cholera raged at Fort Harker and in Elsworth, Logan pointedly asked, "Where is our Health Board?" He had presided over the Department of Sanitary Relations of Kansas in 1865 and, in an elaborate report, had even then complained of the lack of health-considering laws, especially in Leavenworth.

He spoke plainly against what he called "the crime of abortion" and its twin sin, the prevention of pregnancy. He roared out against prescribing apothecaries. In four years, so he claimed, Leavenworth was rid of them mainly through a series of resolutions by the Leavenworth Medical Society to refuse to tolerate such quackery. He backed the movement for a state association of druggists to benefit both themselves and the public. He waged war against the homeopaths, members of "the little pill fraternity," once being bitterly attacked in a verbal war by an homeopathic practitioner into whose hands a former patient of his had fallen.

Fearlessly Logan condemned the current system of medical teaching, both in Kansas and in the nation as a whole. In 1868, he wrote, "There are half a dozen paper universities in Kansas today, any one of which might organize a medical department and issue a diploma." He looked to the Kansas Medical Society to adopt stringent measures to strangle any attempts to establish a cheap medical institution. He had no faith in the government—"Shall physicians of capability decide upon and erect the proper standard of medical education, or shall it be done by a 'one-horse, stock-jobbing legislature'?"

In his presidential address in 1867, Logan had praised the State University for creating a chair to teach sanitary science and stated that it was his hope that this institution would establish chairs of teaching, not nominally but really, in anatomy, physiology, pathology and therapeutics. But, when the Board of Regents two years later resolved to establish the Medical Department in Lawrence, he let out a wild pro-

test. He wanted the school in a commercial metropolis where the medical education could be practical and demonstrative. He had advertised as early as 1860 a medical college in Leavenworth under the auspices of Baker University, but it did not materialize. At one time he had approved plans of establishing a medical school in Kansas City, Missouri, since there was no question as to the existence of teaching patients to sustain it amply.

In 1870, Logan again bitterly opposed the establishment of a college of medicine (and law) at the University in Lawrence, "It would be a great outrage," he wrote,

to locate the Med. Dep't in a little town like Lawrence—with no *hospital facilities* for teaching, either present or prospective. Neither any facilities for dissection &c. That dep't can only succeed in *Leavenworth*, & it will be robbing the medical profession of its heritage, & the people of their money, to plant a little fourth rate medical school in a little fourth rate, Yankee town.

He desired nomination to the Board of Regents for the sole purpose of defeating the location of the Medical School at Lawrence; but this was denied him—"It would have been better for me to have remained silent, but I opened batteries last month in the *Medical Herald*. . . . I fired too soon."

In March, 1870, Logan left the editorial services of the *Herald*. He was described as having been particularly fitted for that task, combining as he did "an intelligence of more than ordinary cultivation, with high excellence of his profession, and unusual personal and mental energy." He continued to attend the meetings of the Kansas Medical Society, to be on committees and on the Board of Censors. His voice was constantly heard in behalf of medical reform. At the outbreak of the Civil War, he had been appointed by the Governor of Kansas to be chairman of the State Board of Medical Examiners. The Board's chief duty was to examine as to qualifications all applicants for appointment as surgeons to the Kansas regiments, and this position he held until the end of the hostilities.

Logan wanted more than this. In December, 1867, he started his campaign for state regulation of physicians, holding up the newly passed law in Maryland, which required every person desiring to practice medicine in the state to appear for examination before the state board. By 1870, Kansas had on the statute books a Medical Practice Act, which required doctors in practice less than ten years to have a certificate from a medical school or medical society; but the act remained forgotten until 1885. At the meeting of the State Society in June, 1871, Logan's resolutions for medical reform, the principal point of which was the appointment of a Board of Examiners by the Society, lost, after a short debate, by a decided

majority. (A similar resolution would be adopted seven years later.) Now, however, Logan was entering upon another phase in his life—that of politics.

As a Diplomat

In the January, 1873, primary race for the United States Senate, Logan became a candidate to defeat Samuel C. Pomeroy, who was up for re-election. Before a final vote could be taken by the State Legislature, Pomeroy was accused of bribery, and John J. Ingalls received the majority. But, in the informal initial ballot, the Leavenworth delegation had gone solid for Logan—"The doctor is a new man," a local paper reported, "in our politics, a man of learning, finished culture, and unblemished reputation. The doctor is the representative of a new Leavenworth." Logan perhaps was aware of the impending resignation of the other senator from Kansas, but the resignation of Alexander Caldwell actually took place after Logan's appointment to Chile.

On March 14, 1873, Logan was appointed by President Grant, through friends in the delegation, as envoy extraordinary and minister plenipotentiary to Chile to replace Dr. Joseph P. Root, a medical colleague and a leading citizen of Wyandotte. One paper commented on Logan's appointment, "We congratulate the country upon the appointment of a gentleman of more than average scholarship, ability and fitness for the position."

Immediately Logan became involved in diplomatic harangues, negotiations, arbitrations. The first of these began in 1872 when Chile offered through Root, then the minister, to arbitrate the case of the whale ship "Good Return," which had been seized by that country 40 years previously. Permission was asked to settle the matter by payment of a gross sum. In December, 1874, the sum of \$20,000 in gold was paid to Logan, who accepted this as payment in full for the claim, and thus ended the protracted negotiation in favor of the United States.

In October, 1874, Logan began the work of another arbitration. This involved questions in the Chile-Peru alliance of 1865, which questions arose out of the liquidation of the accounts of the allied squadron during the war with Spain. He consulted piles of documents, vouchers, and accounts. There is no need to go into details of the lengthy text of the settlement, except to say that a fixed award was made in favor of Chile. "I anticipated both parties would be greatly dissatisfied," Logan wrote, "with the award, but, greatly to my surprise and gratification, both are highly pleased and have made official acknowledgments."

Praises were heaped upon the physician by the two countries. The representative of Chile lauded him, "Thanks to the clearness of your observations, it has

been possible for us to arrive at the happy end of a journey whose obstacles have not been less than its duration."

Another negotiation involved Logan as an arbiter in a boundary dispute between the governments of Bolivia and Chile over a large tract of valuable nitrate deposits. In September, 1873, Logan complained to Hamilton Fish, secretary of state, that the treaty of 1866, which had intended to settle the issue, had not done so. The minister was instructed to observe strict neutrality. Logan replied,

The impression made upon you that I had purposed accepting the trust without the consent of my Government surprised me—nothing was further from my intention than doing an act so unbecoming my official position . . . but as it is my custom in writing to rather prefer too great prolixity than encounter the risk of want of perspicuity, I trust you will overlook the error.

This was typical Logan!

Repeatedly Logan recommended friendly action. In December, 1875, he was granted a leave of absence because of poor health and resigned in May, 1877. Two years later, he was appointed from Illinois, to which state he had moved, to the post of minister resident to the Central American states.

In 1879, Chile declared war on Peru, the alleged pretext being that Peru had made an offensive treaty with Bolivia, a country with which Chile was still disputing, but the true object being that Chile wanted the rich Peruvian province of Tarapará. The Chilean forces triumphed, and the Peruvian government collapsed. It was then, in 1882, that Logan was chosen again to serve as minister to Chile because of his long experience in Spanish-American affairs, his personal acquaintances with many of the actors in the drama, and the confidence which was reposed in his character and discretion. This appointment had the full approval of the Chilean minister of foreign relations, who considered it as a show of delicate deference towards his country and "was of itself alone a proof, in advance, of the sincere relations which would govern the new movements which he was charged to initiate." Logan's instructions were a reiteration of our country's previous policy—Chile's right to ample indemnity and disapproval of hindrance of the formation of a stable government in Peru.

Logan was involved in numerous proposals concerning territory, indemnity, custom duties, military occupations, revolutions. He once suggested that he be given increased powers and jurisdiction, but this was denied him. However, much was left to his good judgment because of the great distance and rapidity of events. Chile more and more resented opposition to her imperialism, finally declaimed any United States

offer, and in 1883-4 concluded a provisional treaty with the then ruling government in Peru. Bolivia formally agreed to make a truce also. The conclusion has been drawn that United States diplomacy accomplished practically nothing when Logan was told to urge Peru into a humiliating treaty. Chile was left hostile; Peru aggrieved; our capitalists disgusted. Although complete settlement would not be forthcoming until 50 years later, to Logan at that moment the treaty meant peace.

While in Chile, Logan also made suggestions for the necessity of concluding a postal treaty between that country and the United States. He proposed that claims of the United States citizens be settled by a mixed commission. He reviewed the claims of excessive taxation of American merchants. He was involved in the problem of the secularization of cemeteries and the establishment of a registry for them and for civil marriages. And, he wrote of consummating these measures—"All these measures are fairly under way, & I have no doubt of my ability to accomplish them all." He left the diplomatic service in 1885 and returned to his home, now Chicago.

As a Writer and Editor

During his first stay in Chile, Logan collected material to confirm a conviction expressed in his earlier report on the sanitary relations in Kansas. This conviction was that the greater or less prevalence of certain of the acute infectious diseases was in constant association with certain general physical conditions. In 1878, Logan published his book, *Physics of the Infectious Diseases* (Figure 3).

Here Logan put forth several ideas, two propositions of which were—first, that, throughout the wholly rainless districts of the Pacific coast of South America, where earthquake energy was most strongly and constantly developed, existence of a large number of infectious diseases was unknown; and second, that, in such portions of it alone as possessed a rainfall during a limited part of the year, were any of these diseases to be observed, and then perhaps after the winter earthquake season had passed. He declared that the prevalence of the general class of acute infectious diseases was inversely to the electric energy of the locality. Logan was at his best in describing natural energy—The earthquake "came like a rush of lost spirits, clanking their chains in the wildness of despair." Or, in another place he described summer lightning upon the tops of the Andes—It appeared "that the demons of the mountains, like Rip Van Winkle's ghostly community, were bowling mammoth ten-pin balls among the lofty granite peaks."

Logan also talked about the function of the nervous system. There was a form of energy specific to each anatomical locality, and the central nervous axis

PHYSICS

OF THE

INFECTIOUS DISEASES.

COMPREHENDING A DISCUSSION OF CERTAIN PHYSICAL PHENOMENA IN CONNECTION WITH THE ACUTE INFECTIOUS DISEASES.

BY

C. A. LOGAN, A.M., M.D.



CHICAGO:
JANSEN, McCLURG AND COMPANY.
1878.

Figure 3. Title page of Logan's book on disease.

was the reservoir of that vital energy through which the physical structure was maintained. He approached the maladies of the human body in its atomic and molecular make-up. The book apparently sold well, for the publishers later requested Logan to make an enlarged revision, but he did not find time to do so.

A contemporary reviewer of the book remarked that some of his theories were untenable and those which were tenable were already well known. Another reviewer noted, "We especially recommend this modest little volume to all who are interested rather in the *causes* of disease, and scientific treatment based thereon, than in mere empirical routinism. It is a handsomely printed and bound volume, which should be found in every physician's library." And, another reported that the book contained much useful and interesting information.

A present-day reviewer has stated that Logan's epidemiology did not appear too accurate as he gave no supporting data and was not apparently acquainted with the work developed by the European public health authorities. He obviously was enamoured by the physical phenomena of the region, on which he developed his theory; and he gave over-emphasis to the nervous system of the body. But, our reviewer continued, "It is most interesting that Logan recognized the molecular construction of disease, and it

strikes me as being an early use of the term. Most significant is Logan's sentence—"It were fortunate, indeed, if the morning of *molecular pathology* had fully dawned, in order that we might soon witness the advent of the day of *MOLECULAR THERAPEUTICS*."

After Logan retired from his diplomatic duties, he became the literary executor of his cousin, General John A. Logan. In this capacity, he published in 1887 the general's voluminous manuscript under the title of *The Volunteer Soldier of America, Together With a Biographical Memoir*. John Logan was major-general of volunteers in the Civil War, elected United States senator from Illinois, nominated for vice-president in 1884, wrote his war book, *The Great Conspiracy*, and conceived the idea of Memorial Day.

The Volunteer Soldier was a complete analysis of the American military system and covered every battle of the rebellion; it was an attempt to annihilate the dictum that the great soldier could only become such through academic training; and it was a demand for justice to the general, who believed that he had been at one time deprived of a promotion. Logan the editor wrote, "His charge is as crushing as it is brilliant; but it is also as open as it is vigorous."

Logan was an active Republican orator in the presidential campaigns of 1888 and 1896. He had received in 1868 an honorary M.A. degree from Yale University and an honorary M.D. degree from Bellevue Hospital Medical College. He also was given an LL.D. from the University of Chile and an M.A. from Baker University, Baldwin, Kansas. The last five years of his life he spent in Los Angeles, where he died of Bright's disease, complicated by a heart ailment, on January 30, 1899, at the age of 66. Surviving were his wife and one daughter; a son had died 11 years previously.

Dr. Logan once wrote, "It is wonderful how old papers of all kinds accumulate on one's hands during a life spent among books and manuscripts."

Logan's life, spent among books, manuscripts, editorials and documents, was full and rich and vigorous. His steady, able hand has left a worthy mark on Kansas medicine, international diplomacy, and literature. To express his philosophy, we may perhaps use one of his own sentences—"Let no man however obscure his location, or however small his ambitions, shut his eyes to the rapid revolutions of the wheel of progress."

Acknowledgments

I wish to thank for their kind assistance Mr. Charles L. Waterous, grandson of Dr. C. A. Logan; and Dr. Robert P. Hudson, chairman, Department of the History of Medicine, University of Kansas Medical Center.

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EDITOR'S NOTE: References may be obtained by writing the JOURNAL, 315 West 4th Street, Topeka, Kansas 66603.

Philosophical or Physiological?

(Continued from Page 128)

to this problem and a committee of this organization has proposed that even when cardiac and pulmonary function are maintained by artificial means, a straight line electroencephalogram indicates death. In support of this position Dr. Jean Hamburger, Professor Neuropathology at the Faculté de Médecine de Paris is quoted as follows, "Death can no longer be regarded as a unique, instantaneous, and unequivocal event. Through the action of modern therapeutic techniques, death is now extended in time, discrete, affecting various parts of the body separately and in sequence. . . . It is clear that traditional criteria of death, based on circulatory indications, are invalid. Diffuse, irreversible death of the nervous system is death of the individual." It was something like this that I tried to say to the student nurse about the double-pithed frog nearly 20 years ago.

NOMINATING COMMITTEE

The Nominating Committee met in Topeka on Sunday, March 5, 1967, and submits the following names as candidates for the elective offices of the Kansas Medical Society:

President-Elect

John L. Morgan, M.D., Emporia. Born in 1915. Graduated from the University of Pennsylvania School of Medicine in 1940. Has served as Councilor and chairman of committees.

First Vice President

Leland Speer, M.D., Kansas City. Born in 1912. Graduated from the University of Kansas School of Medicine in 1936. He has served as Secretary.

Second Vice President

Abraham M. Cherner, M.D., Hays. Born in 1910. Graduated from the University of Chicago School of Medicine in 1936. Has been Councilor and chairman of committees.

J. Gordon Claypool, M.D., Howard. Born in 1916. Graduated from the University of Kansas School of Medicine in 1941. Has been Councilor; currently serving on the Blue Shield Board.

Kenneth L. Graham, M.D., Leavenworth. Born in 1921. Graduated from the Ohio State University College of Medicine in 1945. Has been chairman of committees; currently serving on the State Board of Health.

Edward F. Steichen, M.D., Lenora. Born in 1905. Graduated from Rush Medical College in 1931. Has been Councilor; currently a member of the Kansas Legislature.

Evan R. Williams, M.D., Dodge City. Born in 1925. Graduated from Northwestern University School of Medicine in 1952. Currently serving as Councilor and has been chairman of committees.

Secretary

Francis T. Collins, M.D., Topeka. Born in 1914. Graduated from the University of Kansas School of Medicine in 1943. Has served as Councilor; currently serving as Secretary.

Treasurer

John L. Lattimore, M.D., Topeka. Born in 1894. Graduated from the Fort Worth School of Medicine in 1918. Is currently serving as Treasurer.

AMA Delegate

John C. Mitchell, M.D., Salina. Born in 1913. Graduated from the University of Kansas School of Medicine in 1938. Past president of the Society and has served one term as AMA Delegate.

Alternate AMA Delegate

William J. Reals, M.D., Wichita. Born in 1920. Graduated from Creighton University School of Medicine in 1945. Has served as Councilor; currently Alternate AMA Delegate.

108th Annual Session
KANSAS MEDICAL SOCIETY
Town House Hotel
Kansas City, Kansas
April 30-May 3, 1967

The President's Message


DEAR DOCTOR:

Public service is the fulcrum upon which we balance the result of our legislative effort. This is singularly true in health—first, because of its essential character which invites public control and second because each individual physician stands alone before the community as a symbol for the entire profession.

Therefore, we each influence the result of our collective legislative effort with every professional service we perform. The colleague whose patients speak of him as competent and sympathetic provides a public service that is daily apparent in legislative activities. His influence in the passage of sound health legislation surpasses any words of ours that might be spoken in Topeka.

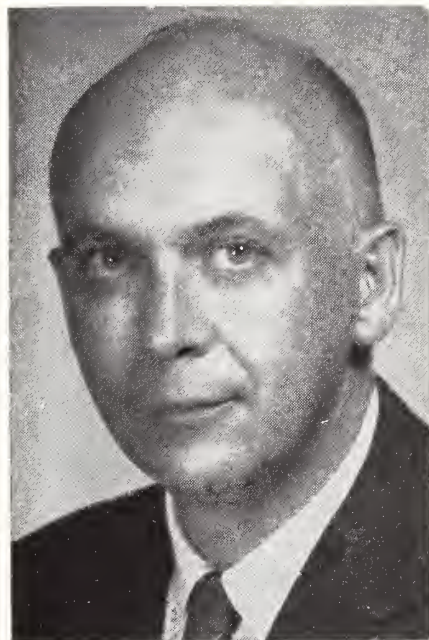
Public service also is the basis upon which our Society evaluates health legislation. Rarely have we sponsored or endorsed a bill designed to aid the physician. Our consistency stands in our favor here also because however the lawmaker may choose to assail the doctor or the medical profession he would be pressed to justify his opposition on the grounds that we are using the Kansas law in our own self-interest.

This small reminder is intended for each of us, including myself, to guide us when we speak with our Senator or Representative to support or endorse any bill in which we may have an interest.

 *Sincerely yours,*

James H. McClure M.D.

President



KANSAS MEDICAL SOCIETY

108th Annual Session

Town House Hotel

Kansas City, Kansas

April 30-May 3, 1967

SUNDAY, APRIL 30

House of Delegates

MONDAY, MAY 1

Athletic Events

Sports Banquet

TUESDAY, MAY 2

General Sessions

**Aerospace Medicine
presented by NASA**

Exhibits

President's Banquet

WEDNESDAY, MAY 3

General Sessions

Hospital Workshops

Exhibits

House of Delegates

Reservations May Be Made Now at the Town House



Editorial COMMENT

George A. Wolf, Jr., M.D.

Dr. George A. Wolf, Jr., assumed new duties September 1, 1966, as provost of the University of Kansas Medical Center and dean of the School of Medicine.

He succeeds Dr. C. Arden Miller who resigned to accept the vice chancellorship in health sciences at the University of North Carolina. Dr. Miller had been on leave to study in London.

Dr. Wolf comes to Kansas from Boston where he was executive director of the Tufts-New England Medical Center and vice president for medical and dental affairs of Tufts University.

He was born April 20, 1914, in East Orange, New Jersey, and was graduated from Montclair (N. J.) High School. He earned his bachelor's degree in biology from New York University Heights College in 1936 and the M.D. from Cornell in 1941. He was a member of Phi Beta Kappa and Sigma Xi scientific honorary. He is certified by the American Board of Internal Medicine and is a fellow of the American College of Physicians.

Dr. Wolf interned and served residency in New York Hospital and the Cornell University Medical College where he held various positions and practiced until 1952. From 1952 to 1961 he was dean and professor of clinical medicine at the University of Vermont College of Medicine. He held the Tufts position from 1961 to 1966.

Dr. Wolf is immediate past president and serves as a member of the executive council of the Association of American Medical Colleges. He is on the advisory committee of the National Disease and Therapeutic Index, the general research support advisory committee of the Department of Health, Education and Welfare, the liaison committee on medical education of the AMA and AAMC, the joint committee on medical education and theology of the Board of Christian Education.

Dr. Wolf is an Easterner with youthful ties to things Midwestern in medical progress. It was a book by KU's Dr. Logan Clendening, "The Human Body," that inspired Dr. Wolf to study medicine.

Dr. Wolf admits to a personal flair for high flight. He is taking flying lessons to qualify for a pilot's license.

He and his wife, Marguerite, enjoy a 15-acre farm in Vermont as a vacation retreat, complete with patched barns, and an old grist mill beside a swift stream. They have raised pigs, chickens, ducks, turkeys, rabbits, dogs and cats there in their leisure with periodic tours on a golf course as dub players.

Dr. and Mrs. Wolf have settled into the dean's residence at 5800 Mission Drive, Mission Hills. Their daughter Patricia, 22, is a senior at the University of Vermont. Daughter Deborah, 20, is a junior at Mount Holyoke College, Massachusetts, where Mrs. Wolf is an alumna.



George A. Wolf, Jr., M.D.



Personalities—IN KANSAS MEDICINE

Earl D. Merkel, Russell; J. Warren Jacks, Pratt; Roger L. Hartman, Norton; Donald C. Rorabaugh, Abilene; Norman Marvin, Syracuse; and Willard F. Werner, Tribune, attended the 13th annual general practice review at the University of Colorado Medical Center in February.

The Distinguished Service Award as the outstanding young man of the year for 1966 was presented to Merlynn Colip, Norton, at the Norton Community Awards Banquet held late in January.

Dr. and Mrs. Francis Stone, Jr., Fort Scott, attended a symposium on hearing disorders in children held in Oklahoma City in January.

Lawrence E. Leigh, Overland Park, was recently appointed to a three-year term on the Commission on Environmental Medicine of the Academy of General Practice.

John P. White, Parsons, has been appointed chief surgeon of the Northern Division of the Katy Railroad.

In January, Wayne O. Wallace, Atchison, was elected to active membership in the American Academy of General Practice.

Ruth Montgomery-Short and Irene Koeneke, Halstead, attended a meeting of the Pan American Medical Women's Alliance in Lima, Peru, in February. Dr. Short presented a paper, "The Hearing Conservation Project in the State of Kansas USA."

James T. Good, Fort Scott, was elected a Fellow of the American College of Physicians in January. An-

other Fort Scott physician, Patrick McCann, was made an associate member of the College.

James B. Pretz, Kansas City, was the guest speaker at the charter party of the Optimist Club of Stafford in January.

The staff of St. Joseph Hospital, Concordia, held their annual election of officers in January. The new officers for 1967 are Harvey Smith, president; Avis Bray, vice president; and Roy Nixon, Secretary.

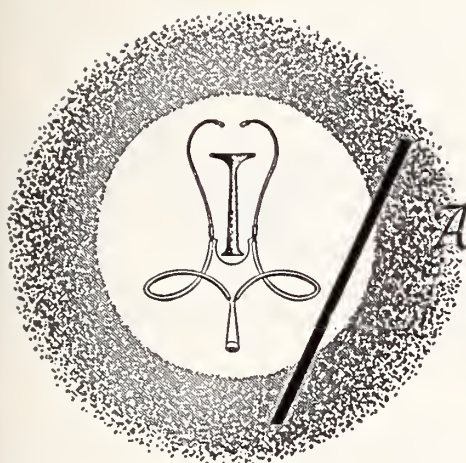
A farewell dinner for Moheb Hallaba, superintendent of Winfield State Hospital and Training Center, was held in late January. Dr. Hallaba left the first of February for two months' service in Viet Nam.

Warren F. Bernstorff, Winfield, was one of the past presidents of the Kansas Association of School Boards to be honored during the 50th annual convention of the organization held in Topeka in January.

Garden City physician, Russell J. Maxfield, is one of six nominees for a five-year term on the board of directors of the University of Kansas Alumni Association.

Richard Conard, Emporia, has been elected a Fellow of the American College of Radiology. The fellowship degree was awarded at the annual fellowship convocation of the ACR held in Chicago in February.

C. H. Benage, Pittsburg, was recently presented with an engraved plaque by the Board of Crawford County Commissioners, in recognition of his work with mental health in that area.



Announcements

Professional meetings, conferences, and postgraduate courses of national importance are listed for the Doctor's CALENDAR. Notice of the session is posted in advance to allow the physician time to make preparations.

Scholarships for completion of training in physical and occupational therapy are available from the National Society for Crippled Children and Adults. These scholarships are made possible through a grant from Kappa Delta Phi sorority. Under this program, scholarships are awarded to seniors in a certificate course in physical or occupational therapy or to those completing their clinical affiliations. The basis of selection is academic excellence, financial need and ability to utilize training. The deadline for applications is May 1. For further information, those interested should write the Scholarship Coordinator, National Society for Crippled Children and Adults, 2023 W. Ogden Avenue, Chicago, Illinois 60612.

MARCH

Mar. 31-Apr. 1 Cancer in Children—19th annual Midwest Cancer Conference, Lassen Hotel, Wichita. No fee or advance registration. Write: American Cancer Society, Kansas Division, Inc., 824 Tyler, Topeka 66612.

APRIL

Apr. 3-7 Annual spring congress in *Ophthalmology and Otolaryngology*, Gill Memorial Eye, Ear, Nose and Throat Hospital, Roanoke, Virginia. Write: H. L. Bell, M.D., in care of the hospital, 707-11 S. Jefferson, Roanoke 24008.

Apr. 3-5 Spring session, American Academy of Pediatrics, San Francisco-Hilton Hotel, San Francisco. Write: American Academy of Pediatrics, 1801 Hinman Ave., Evanston, Illinois 60204.

Apr. 10-13 38th annual scientific meeting, Aerospace Medical Association, Washington Hilton Hotel, Washington, D. C. Write: W. J. Kennard, M.D., Aerospace Medical Association, Washington National Airport, Washington, D. C. 20001.

Apr. 10-13

American Industrial Health Conference, Americana Hotel, New York City. Write: American Industrial Health Conference, 55 E. Washington Ave., Chicago 60602.

Apr. 12-14

Annual conference, National Society for Prevention of Blindness, Inc., Christopher Inn, Columbus, Ohio.

Apr. 17-20

15th annual clinical meeting, American College of Obstetrics & Gynecology, Hilton Hotel, Washington, D. C.

Apr. 30-May 3

Annual session, Kansas Medical Society, Town House Hotel, Kansas City, Kansas.

MAY

May 3

Scientific session, *Current Concepts in Etiology and Diagnosis of Cancer*, American Cancer Society, Sheraton-Dallas Hotel, Dallas. Write: Dir. of Professional Education, American Cancer Society, Inc., 219 E. 42nd, New York City 10017.

May 5

Annual seminar, *Pediatric Neurology*, Baptist Memorial Hospital, Kansas City, Missouri. Write: Medical Staff Office, Baptist Memorial Hospital, 6601 Rockhill Road, Kansas City, Missouri 64131.

May 11

Annual Dr. F. G. Thompson, Sr. Lectureship, *Complex Supraventricular Arrhythmias*, Thompson-Brumm-Knepper Clinic, St. Joseph, Missouri. Guest speaker, Lewis E. January, M.D., president of the American Heart Association and professor of medicine, State University of Iowa.

May 11-13

Annual meeting, Mid-Central States Orthopaedic Society, Sheraton-Prom Motel, Kansas City, Missouri. General meeting

of Region VIII will be held in conjunction with the annual meeting. Write: H. O. Marsh, M.D., Secretary, Mid-Central States Orthopaedic Society, 14 Douglas Parkway, Wichita 67206.

JUNE

- June 15-16 Annual meeting, American Rheumatism Association, New York-Hilton Hotel, New York City. Write: Miss Margaret M. Walsh, Exec. Sec., 1212 Avenue of the Americas, New York City 10036.
- June 26-28 Spring clinics in *Pediatrics* sponsored by the Children's Hospital, Denver. Morning seminars and lectures will be held at Vail, Colorado. Write: Joseph Butterfield, M.D., Children's Hospital, 19th Ave. at Downing, Denver 80218.

POSTGRADUATE COURSES

University of Kansas:

- Apr. 3-5 *Ophthalmology*
- Apr. 5-7 *Otorhinolaryngology*
- Apr. 10-13 *Surgery*
- Apr. 17-19 *Anesthesiology*
- Apr. 21 *Infectious Diseases*
- May 8-9 *Cardiac Auscultation*
- May 24-26 *Epilepsy, Syncope and Related Disorders*

For further information write the Department of Postgraduate Medical Education, University of Kansas School of Medicine, Rainbow Blvd. at 39th St., Kansas City, Kansas 66103.

University of Colorado:

- Apr. 3-7 *Management and Care of Respiratory Insufficiency* (offered three times a year; limited to 10 registrants for each course)
- Apr. 27-29 *Clinical Dermatology* (Limited to 32)
- June 19-23 *Marriage Counseling for Physicians and Clergy* (Estes Park)

For further information, write the Office of Postgraduate Medical Education, University of Colorado School of Medicine, 4200 E. Ninth Avenue, Denver 80220.

Menorah Medical Center:

- May 19-20 *Modern Trends in Medical Management*
- June 12-16 *Neurologic and Sensory Diseases*

For further information, write the Department of Postgraduate Education, Menorah Medical Center, 4949 Rockhill Road, Kansas City, Missouri 64110.

- Mar. 21-22 Continuing education course in *Pediatrics*, University of Nebraska College of Medicine. Write: Public Relations Dept., University of Nebraska Medical Center, Omaha.

- June 5-7 *Clinical Electroencephalography*, sponsored by the American EEG Society, Philadelphia. Write: Donald W. Klass, M.D., EEG Course Director, Mayo Clinic, Rochester, Minnesota.

MEDICAL TECHNOLOGISTS: *Mobile Workshops in Hematology*, sponsored by the Kansas Society of Medical Technologists. Registration fee: \$3.00.

East Circuit:

- Mar. 22 Veterinary Hall, Kansas State University, Manhattan
- Apr. 5 Providence Hospital, Kansas City, Kansas

- Apr. 19 Mercy Hospital, Fort Scott

West Circuit:

- Mar. 22 St. Mary of the Plains College, Dodge City
- Mar. 29 St. Anthony Hospital, Hays
- Apr. 12 CLA Classroom, Schweiter School, Wichita

For complete program and registration form, write: Sister Ann Catherine, M.T. (ASCP), 3400 Grand Avenue, Wichita 67218.

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Book REVIEWS

OBSTETRICS: FROM THE ORIGINAL TEXT OF JOSEPH B. DELEE, M.D., by J. P. Greenhill. W. B. Saunders Company, Philadelphia, 1965. 1,246 pages illustrated. \$20.00 (13th edition).

It has been more than 50 years since the publication of Joseph B. DeLee's *Principles and Practice of Obstetrics*. This 13th edition by one of DeLee's outstanding students, J. P. Greenhill, is the sixth revision by the same author.

The 1965 edition (as were all the others) is a veritable storehouse of information about all facets of human reproduction. This new edition contains 148 additional pages and 419 new illustrations. The improved typography, excellent photoengraving, and double column printing make it a very readable book from the technical aspect. Chapter by-lines are accorded the 34 outstanding contributors who have prepared chapters in their special fields. A new chapter has been added on family planning, one of the now accepted parts of obstetric medical care.

This text integrates the fundamental knowledge of human reproduction, with the tremendous contributions of sister sciences to create the best in current obstetric thought and practice, making it invaluable to teacher, student, and clinician. As were the previous editions, this is an outstanding, practical and comprehensive text. It is highly recommended.—*N.H.O.*

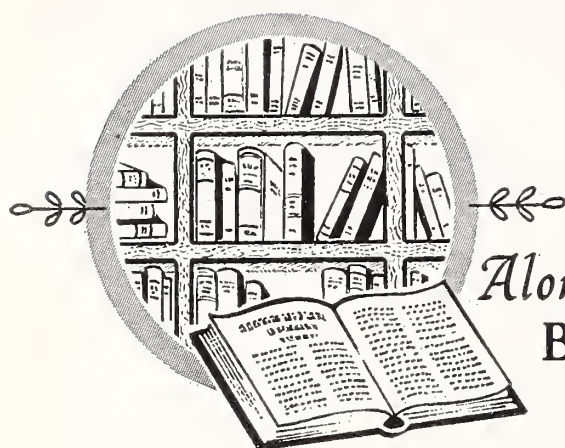
MANAGEMENT OF THE PATIENT WITH SUBNORMAL VISION by Gerald Fonda. C. V. Mosby Company, St. Louis, 1965. 160 pages illustrated. \$11.00.

Dr. Gerald Fonda has written a book concerning subnormal vision, which contains a working classifica-

cation for those in practice who so often have to deal with the problems of subnormal vision. Many of his treatments are those that are fairly simple and can be utilized by many practicing ophthalmologists. The greatest problem which all practicing physicians find is with the motivation of the patient to use the various visual aids and systems which have been described in the *Management of the Patient with Subnormal Vision*. As he points out, many of these systems may be used and many will aid those people that are motivated to be aided, but regardless of the system used many patients who do not have the motivation to use the various systems described will not be aided.—*B.S.P.*

OPERABLE HEART DISEASE: PATHOPHYSIOLOGY, DIAGNOSIS & TREATMENT by Howard D. Sirak. C. V. Mosby Company, St. Louis, 1966. 130 pages illustrated. \$12.50.

This 130-page monogram presents fundamental anatomy, pathophysiology, clinical findings and laboratory data found in the most common types of congenital and acquired heart lesions amenable to surgical treatment today. The book should be primarily of value to medical students and house physicians in training, but may also be of great value to general practitioners and older specialists who wish to understand the dynamics of present day diagnosis and treatment of cardiac lesions. The book is well illustrated and written so that it can be easily understood.—*R.M.B.*

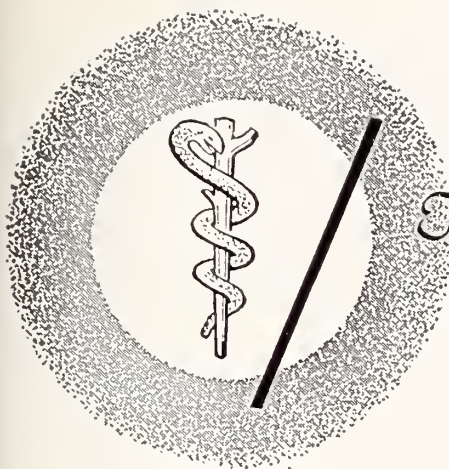


Along The BOOKSHELF

Clendening Medical Library

RECENT ACQUISITIONS

- Best, Charles H. The physiological basis of medical practice. William & Wilkins, 1966.
- Bogert, Lotta Jean, 1888-. Nutrition and physical fitness. 8th ed. Saunders, 1966.
- Borell, Ulf Sören Mendelsson. The diagnosis of hydatidiform mole. . . . Thomas, 1966.
- Boyd, William. The spontaneous regression of cancer. Thomas, 1966.
- Brooke, James William. Arthritis and the medical witness. Callaghan, 1966.
- Caveness, William Fields, editor. Head injury; conference proceedings. Lippincott, 1966.
- Cohen, Archibald Clinton. The drug treatment of tuberculosis. Thomas, 1966.
- Collins, Charles J. Management of amenorrhea. Thomas, 1966.
- Dana, Richard Henry. Foundations of clinical psychology. . . . Van Nostrand, 1966.
- Draeger, Jörg. Tonometry; physical fundamentals, development of methods and clinical application. Hafner, 1966.
- Dreifus, Leonard S., editor. Mechanisms and therapy of cardiac arrhythmias. . . . Grune & Stratton, 1966.
- Fletcher, Gilbert Hungerford, editor. Textbook of radiotherapy. Lea & Febiger, 1966.
- Greco, Ray Silvio. One man's practice. . . . Tavistock, 1966.
- Greenblatt, Robert Benjamin, editor. Progress in conception control. . . . Lippincott, 1966.
- Illingworth, Ronald Stanley. The development of the infant and young child, normal and abnormal. 3d ed. Williams and Wilkins, 1966.
- Karczmar, Alexander George, editor. Ganglionic blocking and stimulating agents. Pergamon Press, 1966.
- Killely, Homer Charles. Benign cystic lesions of the jaws. . . . Livingstone, 1966.
- Kolodny, A. Lewis. Comprehensive approach to therapy of pain. Thomas, 1966.
- Ladee, G. A. Hypochondriacal syndromes. Elsevier Pub. Co., 1966.
- Lear, Erwin. Chemistry and applied pharmacology of tranquilizers. . . . Thomas, 1966.
- Lim, Thomas P. K. Cardiopulmonary function tests in clinical medicine. Thomas, 1966.
- Livingston, Samuel. Drug therapy for epilepsy. Thomas, 1966.
- Locke, Simeon. Neurology. 1st ed. Little, Brown, 1966.
- Louros, Nikolaos Konstantinou. Three gynecologic surgical techniques. . . . Thomas, 1966.
- Martini, Luciano. Neuroendocrinology. Academic, 1966.
- Pryor, William James. A manual of anaesthetic techniques. 3d ed. Wright, 1966.
- Reading, Philip Vernon. Common diseases of the ear, nose and throat. 4th ed. Churchill, 1966.
- Rodahl, Kare. Nerve as a tissue. Harper, 1966.
- Schad, Nikolaus. Differential diagnosis of congenital heart disease. . . . Grune & Stratton, 1966.
- Schein, Clarence J. The common bile duct. . . . Thomas, 1966.
- Sharman, Albert. Reproductive physiology of the post-partum period. Livingstone, 1966.
- Stallworthy, John. Recent advances in obstetrics and gynaecology. 11th ed. Churchill, 1966.
- Swartz, Harry Felix. The allergy guide book. . . . F. Ungar Pub. Co., 1966.
- U. S. Public Health Service. Division of Chronic Diseases. Heart disease in children. . . . Washington, 1966.
- Walsh, John James. Understanding paraplegia. Lippincott, 1964.
- Welch, Claude E. Surgery of the stomach and duodenum. 4th rev. ed. Year Book Medical Publishers, 1966.
- Willson, James Robert. Obstetrics and gynecology. 3d ed. Mosby Co., 1966.



The Kansas Press Looks at Medicine

Editor's Note. In this section the JOURNAL reproduces editorials relating to medicine which have appeared in the lay press. An effort is made to include both favorable and unfavorable comments, and the Editorial Board in no instance assumes responsibility for the opinions expressed.

CASE LOST OVER LOST APPENDIX

LYONS, Kan.—A woman who claimed she didn't lose all of her appendix lost her court case in Rice County District Court Wednesday.

Mrs. Sue Lawson sought an \$11,400 judgment for alleged negligence in performing an operation. Defendants in the suit were Drs. E. R. Hill and L. J. Beyer, both of Lyons.

In her petition, Mrs. Lawson claimed that she continued to suffer pain following an appendectomy performed by the two doctors in February 1963.

She claimed that, in later exploratory surgery, other surgeons learned that a portion of her appendix had not been removed.

The jury deliberated two and one-half hours before returning the verdict.—*The Wichita Eagle*, January 16, 1967.

THE FAMILY DOCTOR

Dr. George E. Burket of Kingman is president-elect of the 30,000-member American Academy of General Practice, which is quite a distinction for a country doctor. His position gives a statement he has made considerable authority:

"We have specialists in hearts, lungs, livers, kidneys—almost any part of the human body. The trouble is no one is specializing in people. In plain words, we need more family doctors and fewer specialists."

Dr. Burket is undubitably right. There should be many more physicians like those of earlier years. The kind who found time to spend at the patient's bedside in his home. As practical psychologists these doctors of old so boosted the morale of the sick that it helped greatly in restoring their health.

But however great the need for doctors specializing in people, it can't possibly be filled. For one reason,

diagnosis is no longer made by having the patient stick out his tongue, checking on his temperature, and feeling his pulse. It requires a variety of tests which cannot be given in the home. The patient must go to the doctor's office or to a hospital for them.

A second factor is equally important. For some years the number of doctors has not been growing so fast as the number of people. As a complicating factor, thanks to medicare, veterans' benefits, and health insurance, many more people in the typical thousand not only take advantage of a physician's services but do so much more frequently.

This has brought about a certain depersonalization of medical care which has been as unavoidable as it is regrettable. The family doctor of the type who was the generality when Dr. Burket was born 54 years ago, like the little red schoolhouse, is sentimentally to be remembered but he is gone beyond recall.—*Hutchinson News*, January 31, 1967.

NEW MEMBERS

The JOURNAL takes this opportunity to welcome these new members into the Kansas Medical Society.

William M. Brewer, M.D. 111 West 10th Hays, Kansas 67601	Robert W. Proctor, M.D. 300 S. Main El Dorado, Kansas 67042
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Philip J. Coverdale, Jr., M.D. 737 E. Crawford Salina, Kansas 67401	Thomas J. Singer, M.D. 105 West 8th Horton, Kansas 66439
--	--

John T. Growney, M.D. 811 Santa Fe Street Atchison, Kansas 66002	Albert L. Steplock, M.D. William Newton Hospital Winfield, Kansas 67156
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KANSAS STATE DEPARTMENT OF HEALTH

TOPEKA, KANSAS

Division of Preventable Diseases—Division of Vital Statistics—Kansas Morbidity Incidence
Summary of Cases Reported in November, 1966 and 1965

<i>Diseases</i>	<i>November</i>			<i>January-November Inclusive</i>		
	<i>1966</i>	<i>1965</i>	<i>5-Year Median 1962-1966</i>	<i>1966</i>	<i>1965</i>	<i>5-Year Median 1962-1966</i>
Amebiasis	1	—	1	13	4	26
Aseptic Meningitis	10	—	1	17	3	17
Brucellosis	—	—	1	9	4	7
Diphtheria	—	—	—	—	1	1
Encephalitis, prim., infect.	14	2	3	53	42	42
Encephalitis, post-infect.	—	1	*	—	6	*
Gonorrhea	247	290	216	2916	2438	2706
Hepatitis, infectious	14	27	23	165	422	422
Meningococcal meningitis	2	2	2	17	15	14
Pertussis	—	—	—	11	23	23
Poliomyelitis	—	—	—	—	—	—
Rheumatic fever	1	—	—	2	4	3
Salmonellosis	23	15	23	260	300	271
Scarlet fever	21	14	20	112	85	112
Shigellosis	4	5	13	62	118	73
Streptococcal infections	247	256	158	2158	2732	1542
Syphilis	101	109	82	1145	854	975
Tinea capitis	15	6	5	56	61	62
Tuberculosis	24	15	18	263	236	242
Tularemia	—	—	1	—	4	5
Typhoid fever	—	—	—	7	—	2

* Statistics for 5-year median not available

PROSPECT OF VICTORY OVER
GERMAN MEASLES

Excellent prospects are in sight for the development of a safe and effective live rubella vaccine. In field trials conducted in recent months by the National Institutes of Health, about 100 youngsters have been immunized with one or another of three experimental live rubella virus vaccines. All three of these vaccines proved capable of causing the production of protective antibodies. Considerable research remains before widespread public use will be possible, however, and it is not expected that a rubella vaccine will be routinely available until 1969 at the earliest. The remaining problems relate primarily to safety and duration of immunity.

Although the rubella virus usually causes only mild symptoms, the vaccine strain of the virus must be attenuated in order that vaccinated persons do not shed rubella viruses capable of causing the disease. This situation would constitute a serious hazard to expect-

ant mothers, due to the capability of the rubella virus to damage the nerve tissue of the developing embryo. Brain damage, severe heart disease, eye cataracts, hearing loss, and other defects occur in at least one out of five of the offspring of mothers exposed to rubella in the first trimester of their pregnancy.

It is estimated that 10-15 per cent of American women of child-bearing age are susceptible to rubella. The last major epidemic in 1964 caused a tragic toll in deformed children born to susceptible women who contracted the disease early in their pregnancy. Another peak is anticipated in 1971, as children grow up who are too young to have acquired immunity in 1964.

Lengthy field trials will be needed to help determine the duration of rubella protection. This is particularly important in evaluating the rubella vaccine, inasmuch as the basic justification for rubella immunization is to eliminate this disease as a cause of congenital abnormalities.



GRANVIL L. KERLEY, M.D.

Dr. Granvil L. Kerley, Topeka, died on January 20, 1967. He was 79 years old.

He was born March 6, 1887, at Simpson, Illinois, and had lived in Topeka since 1927. He was a graduate of the St. Louis University School of Medicine, receiving his degree in 1910. He moved to Topeka in 1913 and was on the staff of the Santa Fe Hospital for two years. He then moved to Kansas City and later to La Junta, Colorado, before returning to Topeka in 1927. He retired from private practice in 1953, but later served on the Board of Sanity Hearings for the Probate Court. Dr. Kerley was a veteran of World War I, having served in France with the U. S. Medical Corps.

He is survived by his wife.

HERSCHEL F. TURNER, M.D.

Herschel F. Turner, 90, Hope, died at Asbury Hospital in Salina on January 28, 1967. He was the father of Dr. John Turner of Garden City.

Dr. Turner had practiced medicine in the Navarre and Hope communities from 1916 until his retirement in 1960. He was born in Smith County, Kansas, on January 25, 1877, and was graduated from the University of Kansas School of Medicine in 1916. He was a member of several medical and civic organizations and for more than 40 years served as superintendent and taught Sunday school in the Hope Methodist Church.

Dr. Turner is survived by two sons and a daughter.

The Kansas Medical Society—1966-1967

OFFICERS

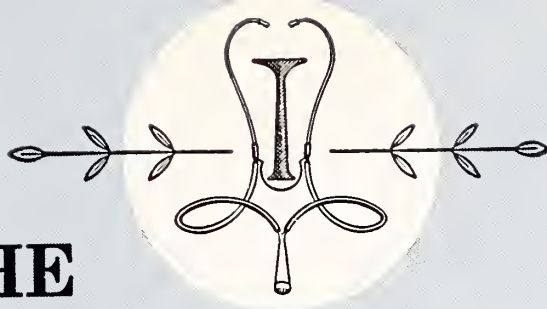
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A.M.A. Alternate.....	J. Warren Manley, Kansas City
Chairman of Editorial Board...	Orville R. Clark, Topeka

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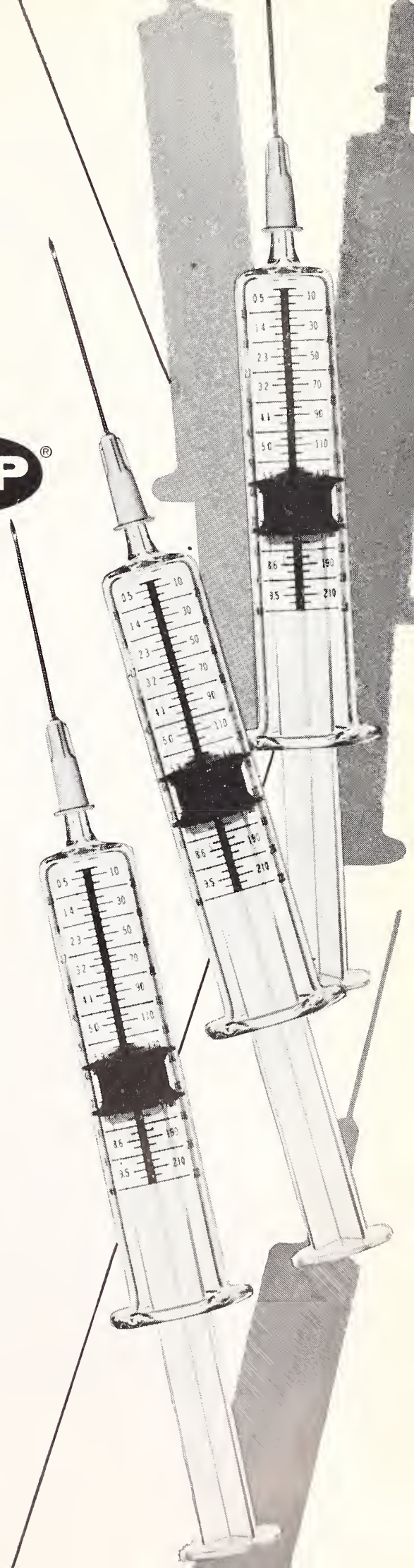
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The JOURNAL of the KANSAS MEDICAL SOCIETY

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Disaster Planning

Report of Tornado Casualties in Topeka

FLOYD C. BEELMAN, M.D., *Topeka*

THE TORNADO WHICH STRUCK Topeka the evening of June 8, 1966, at approximately 7:15 p.m. was, in many respects, an average one, traveling at 35 miles per hour; damage path approximately 22 miles long; width one quarter to one half mile and traveling from southwest to the northeast. There occurred a path of almost total destruction four blocks wide and eight miles long within the city. One unusual aspect of this disaster was the extremely high cost of damage done to property, with some 633 homes destroyed, 403 severely damaged, 548 moderately damaged and 1,403 slightly damaged. Many business buildings, including those of Washburn University, were heavily damaged or destroyed. Preliminary estimates of the cost of damage place this tornado near the top on property losses. Another unusual feature was the low loss of life and total number of casualties in comparison to the total number of population directly exposed as the tornado roared through densely populated areas of the city. Exceptionally good radio and television warnings were given 15 to 20 minutes before and up to the time of disaster and most people were able to find adequate shelter. The average family had just finished the evening meal and was watching television or listening to radios. Stormy weather kept the children inside, and all were alert and aware of the danger and took shelter. The early warning, an informed public, the fortunate time of the day, and adequate shelter minimized the casualty load.

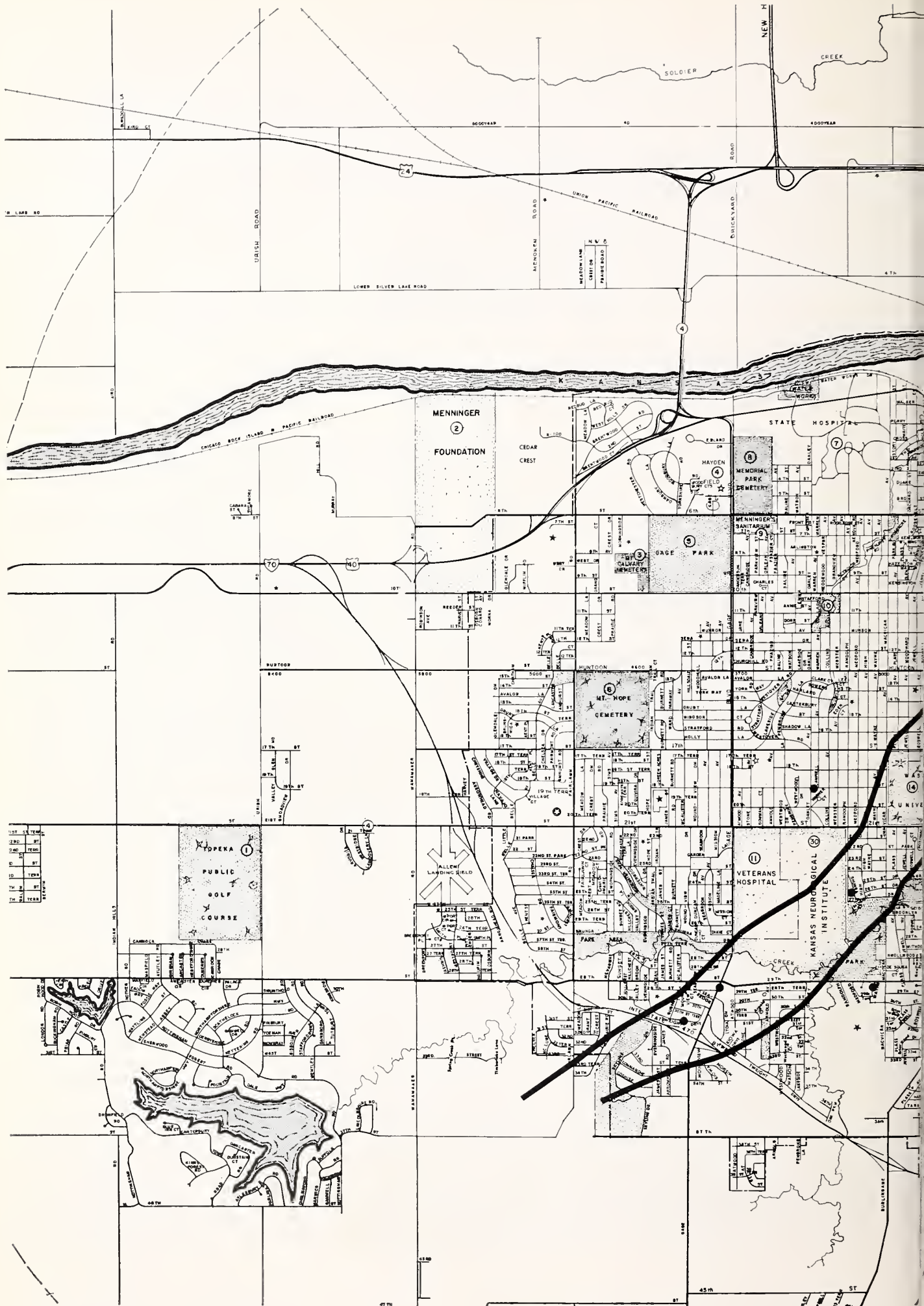
Hospitals within the city suffered very little damage and casualties were coming in their doors before the tornado was out of the city. At this time of day doc-

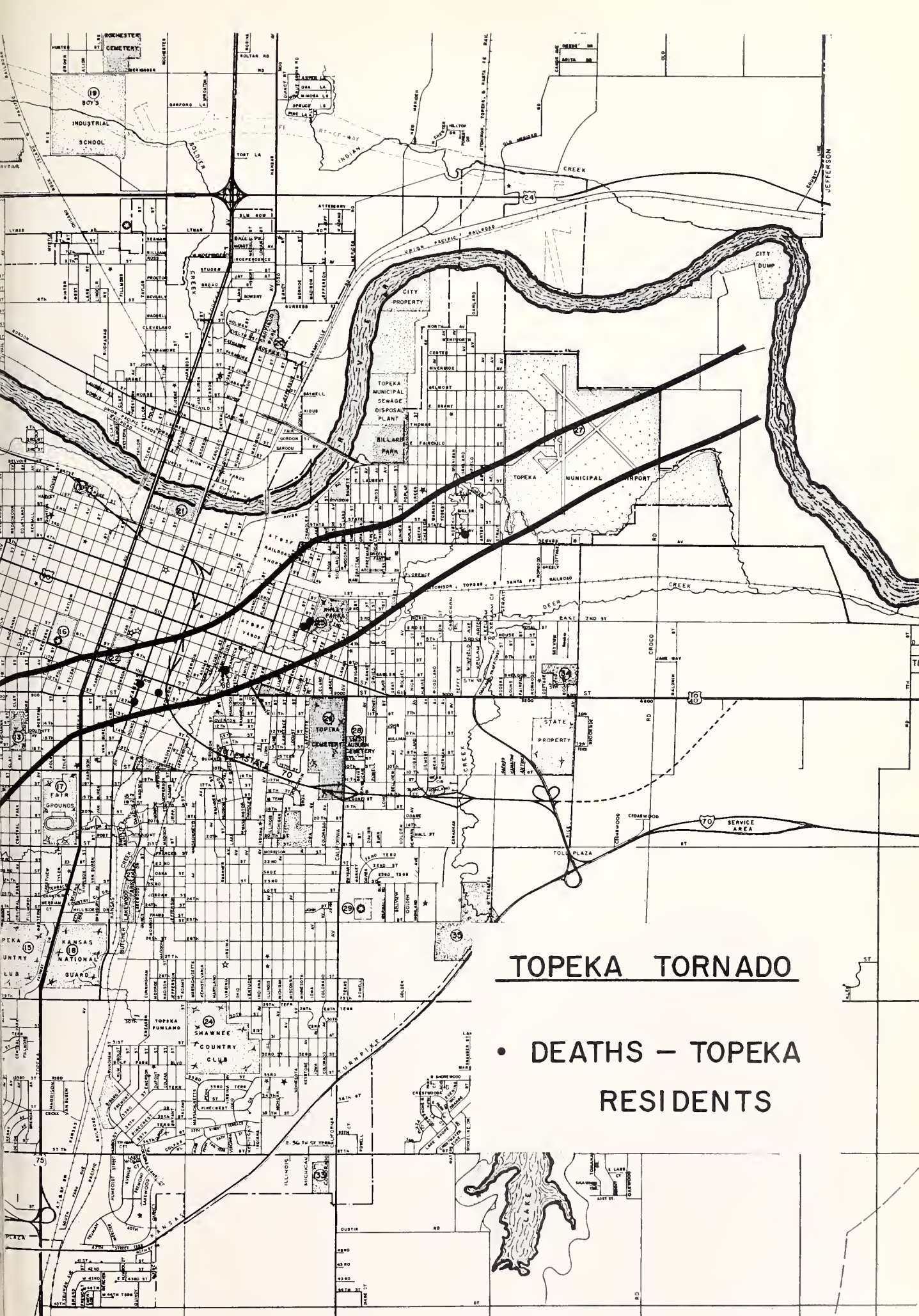
tors were found in every hospital and within minutes many more doctors and nurses were at assigned posts. Casualties were typical of tornado victims: dirty, wet, torn clothing, cuts, abrasions, bruises, fractures, punc-

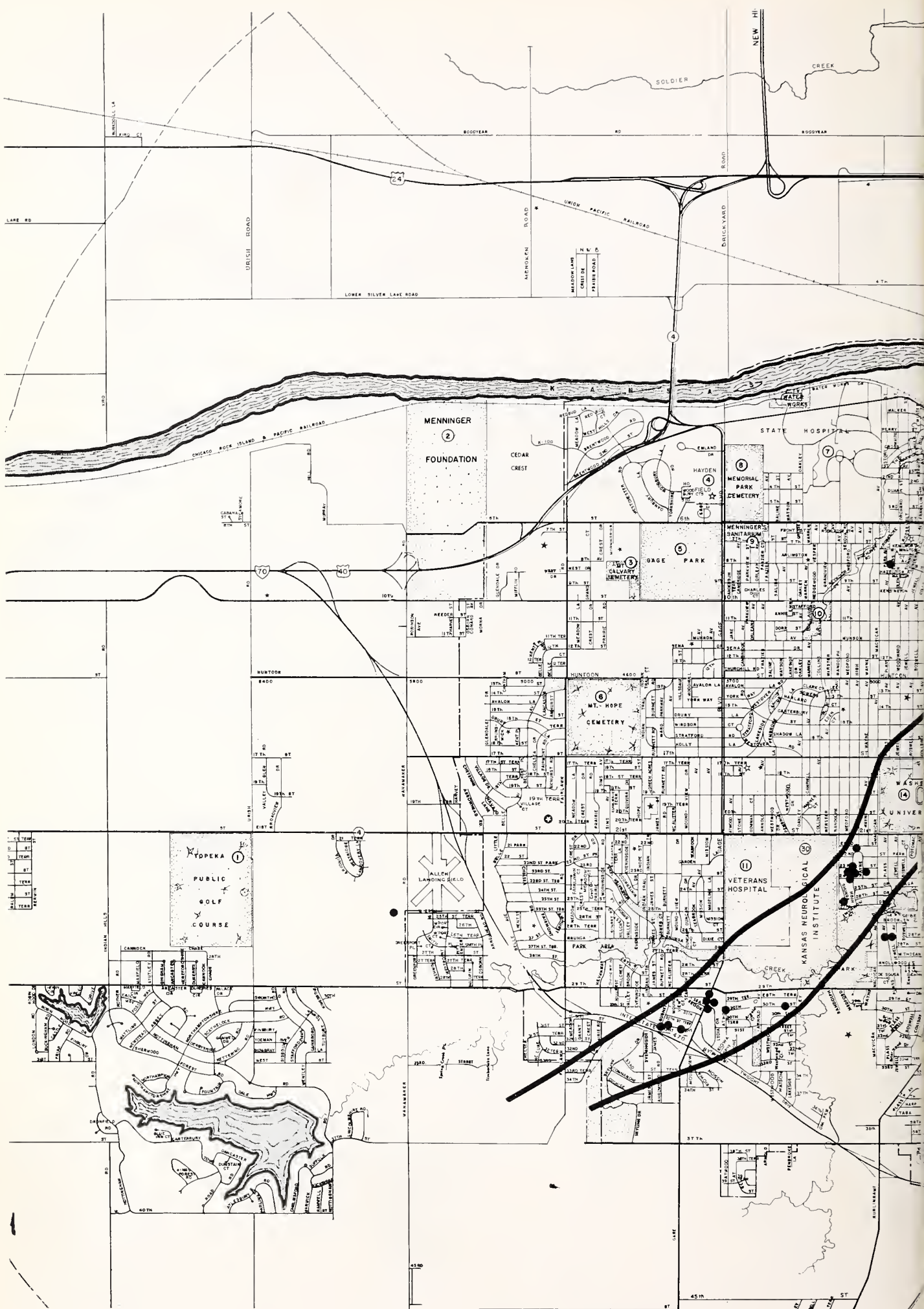
The devastating tornado which struck Topeka on June 8, 1966, roared through the city from the southwest edge to the northeast edge. Casualties were fewer than would have been expected, but property damage was terrific. Here is a brief account of the events of that evening and succeeding days, and comments on the medical aspects of such a disaster by Dr. Beelman who is chairman of the Civil Defense Committee of the Shawnee County Medical Society.

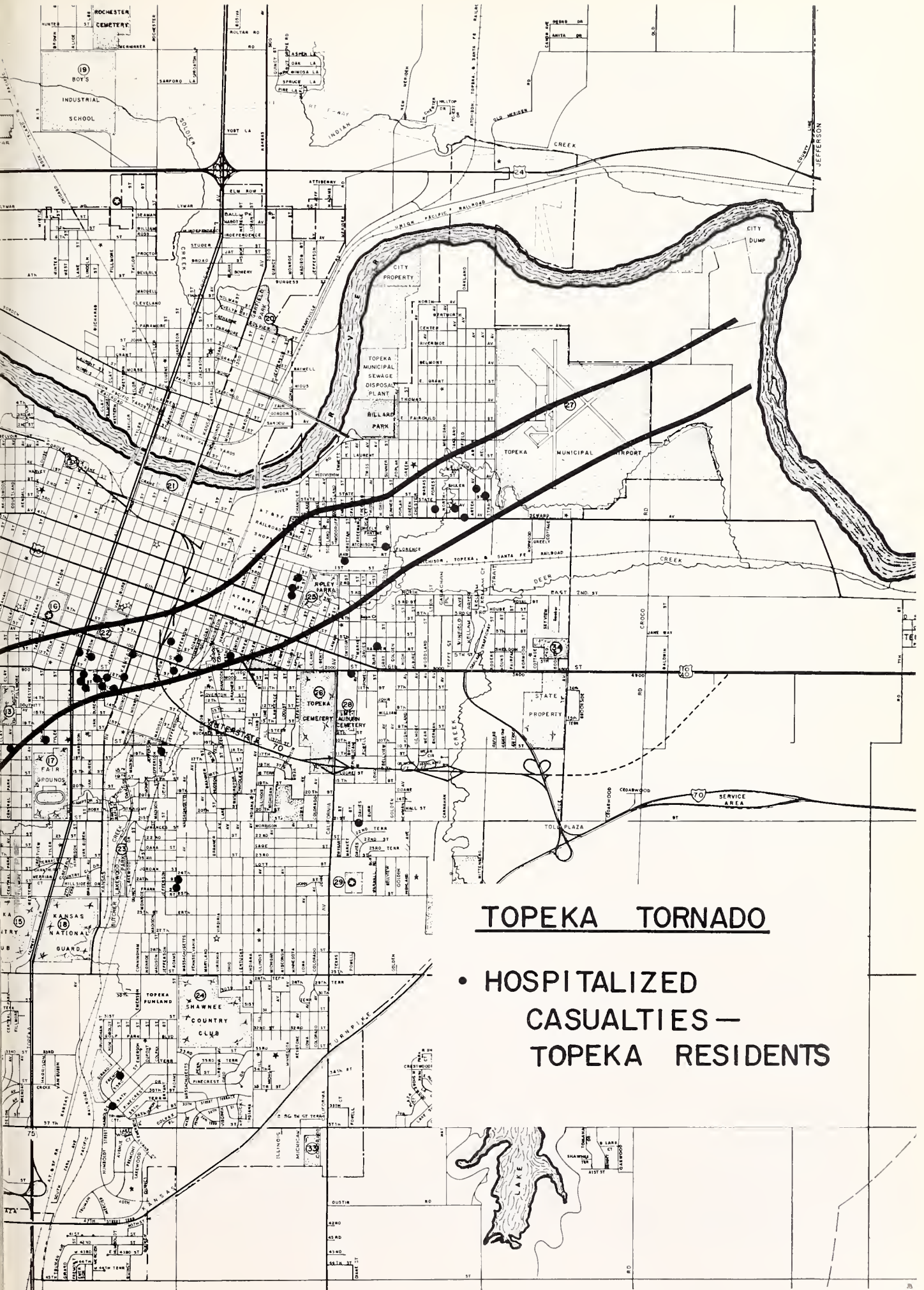
ture wounds, exhaustion, shock, many severely injured and most with minor lesions.

There occurred within the city 12 deaths, all directly injured in the pathway of the tornado and due to trauma. Two other deaths occurred at approximately the time of the disaster, both outside the area of destruction and due to heart disease. Three additional deaths, which were directly attributable to trauma received from the tornado, occurred outside city limits near adjacent communities. Seventy persons were hospitalized in four hospitals, and 316 were treated with









TOPEKA TORNADO

- HOSPITALIZED
CASUALTIES —
TOPEKA RESIDENTS

TORNADO DEATHS IN TOPEKA

	NAME	CORONERS No.	SEX	AGE	SITE OF DEATH	CAUSE OF DEATH
1	M.B.	197	F	92	1451 BYRON STREET	CRUSHED CHEST
2	S.W.	198	M	59	1034 MONROE STREET	MASSIVE TRAUMA, HEAD AND CHEST
3	H.A.	200	F	91	305 LAWRENCE	CRUSHED CHEST
4	O.M.	201	M	70	1034 MONROE STREET	CRUSHED CHEST, SEVERE HEAD INJURIES
5	E.L.	205	M	72	1135½ KANSAS AVENUE	FRACTURED SKULL, CRUSHED CHEST
6	G.L.	206	M	63	706 EAST 8th	HEAD INJURIES -- S 17 HOURS
7	B.W.	207	F	90	1631 WASHBURN	CRUSHED CHEST
8	L.G.	208	M	66	1024 KANSAS AVENUE	CRUSHED CHEST
9	S.T.	209	M	62	2707 B STREET	FRACTURED SKULL
10	G.S.	210	M	61	2940 GAGE BOULEVARD	SHOCK AND EXTENSIVE ABRASIONS AND LACERATIONS
11	J.S.	211	M	19	2529 SHUNGA DRIVE	SEVERE TRAUMA TO HEAD AND CHEST -- S 29 HOURS
12	C.B.	212	M	6	4242 TWILIGHT DRIVE	MASSIVE TRAUMA TO BODY-- S 36 HOUR
13	W.C.	202	M	44	2907 WAYNE	CORONARY 10 MINUTES PRIOR TO TORNADO
14	J.C.	203	M	59	3019 WEST 18th	CORONARY JUST AFTER TORNADO DRIVING TO PLACE OF BUSINESS

minor injuries and released as outpatients. Many more were treated for minor cuts, scratches or puncture wounds and given tetanus injections at shelter centers in the disaster area. At no time was there a shortage of hospital beds, medical supplies, nurses, doctors or auxiliary personnel.

Most casualties were in hospitals within the first hour following the disaster. The majority of the injured were transported in private vehicles by family members or friends. The only ambulance company serving Topeka had in operation two ambulances which transported severely injured persons, a number of which were dead on arrival at the hospital. Ambulances from the Forbes Air Force Base hospital and from several city funeral homes also participated in transporting the injured. Ambulance services did not operate on an organized basis and no centralized morgue was used.

As anticipated, Stormont-Vail hospital received the greater load of casualties. Unfortunate and unavoidable situations placed this hospital at a serious disadvantage. A major building project was underway, which limited space about the hospital and reduced

greatly the flow of vehicles to the emergency room and other entrances. A traffic jam, readily created at first, smoothed out after time and direction were available. Telephone services were disrupted both without and within the hospital. Electric power failure occurred and standby emergency generators were used for limited equipment and lighting. Areas of the hospital designated for emergency services had not been placed on the standby power distribution and adequate lighting was not immediately available. The hospital superintendent, suffering from a recent illness, was in a serious condition and confined as a bed patient in the hospital. The assistant administrator started immediately for the hospital, but was only able to make his way by walking through the pathway of destruction to the hospital, which delayed his arrival. Fortunately, several physicians were in the building and the director of emergency medical services was just arriving at the time. Jamming of the emergency entrance, waiting rooms, service rooms and halls occurred. As injured persons were transferred to litters or carts, relatives or friends arriving with them produced most of the crowding and confusion in the

darkening quarters. Emergency lights were soon in use, followed quickly by an organized evaluation and flow of casualties to areas of service. Assigned doctors, nurses and hospital personnel arrived without being notified, quickly and in sufficient numbers, to handle the emergency situation. An appeal by radio stations for all physicians and nurses to report to hospitals produced an overwhelming response. Only assigned personnel were needed or wanted. Specific assignments had been made as to services to be rendered and areas of the hospital in which physicians would work. No identification tags were available for hospital workers, to distinguish them from scores of persons who wandered in and out of the hospital. Changes were made in work areas for the handling of minor casualties, and physicians who had not been previously assigned to such services were soon at work on the injured. This prevented, to a certain extent, the carrying out of surgical staff policies in the handling of injuries.

The closure of contaminated lacerations, puncture wounds, and failure to find and remove foreign bodies produced the majority of mistakes in the handling of minor casualties. Few cases necessitated surgical procedures and no emergency tracheotomies were performed. Approximately 155 casualties received care at Stormont-Vail; 35 were admitted as inpatients with more serious injuries. Nine were dead on arrival or expired shortly thereafter. The average length of hospitalization was 5.5 days per patient. A number of ambulatory patients were discharged or transferred to their homes in order to increase the number of beds available for casualties. This was done without informing the attending physician or obtaining his approval for their discharge. Within two hours most of the casualties had been given adequate medical and surgical services, had been admitted as inpatients or

discharged to return as outpatients for continued service, or to their own physician's office. Records were kept on most patients, including minor injuries. Within four hours, about midnight, telephone services had been restored, unlimited electrical power was again available, all inpatients were cared for, and an unusual quietness prevailed in the hospital.

Disaster services at St. Francis hospital, in general, functioned smoothly. Acting on a warning of the approaching tornado, preparations were started by the hospital administrator and the disaster plan was put into action. Fortunately, the hospital was well away from the tornado pathway and all utility services were available. Assigned staff physicians, together with other hospital personnel, arrived within a short time and an organized flow of casualties from the sorting or triage area to other service areas of the hospital soon started. Some confusion and crowding at entrances occurred during the first flush of activity. The Disaster Committee chairman, who serves as director of emergency medical services, was out of the city and some delay in organization and personnel assignments occurred. Those duties were quickly assumed by the past emergency medical service director in the absence of assigned physicians to that post. It was estimated that approximately 150 casualties from the tornado were given care. One was dead on arrival, one died shortly after arrival, and twelve were hospitalized. Of the hospitalized cases, one had been hospitalized previously at the Santa Fe hospital. The average length of hospitalization per casualty was 12.2 days. A number of ambulatory patients were discharged from the hospital to their homes at the start of activities, which released more than a sufficient number of beds for casualties needing inpatient care. Detailed records and use of casualty tags for all cases handled were inadequate. The types of

TOPEKA TORNADO CASUALTIES

HOSPITAL	INPATIENTS	OUTPATIENTS	DEATH INCLUDING DOA
STORMONT VAIL HOSPITAL	34	120	9
ST. FRANCIS HOSPITAL	11	100	2
SANTA FE HOSPITAL	7	35	0
WINTER VETERANS HOSPITAL	17	61	3
TOTALS	69	316	14

injuries handled were the same at all hospitals and the mistakes were similar. The acting emergency medical service chief at St. Francis had this to say, "Follow-up visits on some patients who had received deep injuries from wind-borne foreign bodies has shown that these wounds are indeed treacherous. It is probable that any deep wounds of this nature should never be closed unless a formal exploration has been done under careful circumstances. The best management probably would consist of cleansing and debridement, packing the wound open and giving the patient definite instructions to return at an early opportunity for formal debridement. Closure of any wound, except the most superficial, seems to be fraught with great danger of infection and aggravation of the wound."

The Santa Fe hospital, being on the north edge of the tornado's path, was the only hospital damaged. The damage, however, was minor and occurred only to the windows. Telephone services and electrical power failed and the hospital was placed on standby emergency power service. Approximately 35 minor casualties and seven inpatients with more serious injuries were handled. Hospital services were more than adequate to meet the casualty load.

Type of injuries received by the hospitalized casualties were varied. Approximately one half suffered lacerations, abrasions, contusions and puncture wounds; one third had fractures; three were listed as having internal injuries; seven were in a state of shock; nine complained of back injuries; one traumatic amputation of an extremity, and one with a shoulder dislocation.

Preparation for disaster by city and county organizations has been a slow, continuous process. Civil defense workers, in the main, have provided the impetus in stimulating others to plan, train and carry out assigned disaster activities. Medical and hospital planning and preparation for disasters has not lagged. Each of the four hospitals within the city has prepared disaster plans and has had one or more simulated try-outs. The Shawnee County Medical Society has an active Disaster Committee on which are staff representatives from each hospital in the city and county. A plan for the coordinating of medical and hospital disaster activities has been prepared and reviewed each year. Disaster plans from every hospital constitute a part of the over-all plans of the county medical society. It is anticipated that such plans will be reviewed each year and changes made to improve them. An annual request for their latest revised plan is made to each hospital. Physicians have been assigned to hospitals and care has been taken to select specialists to complete each staff. All unassigned physicians, nurses, dentists and other health personnel have been requested to report at the time of a disaster to the Winter Veterans hospital on the west edge of the city. This

hospital is used as a back-up facility and from this pool health personnel can be assigned to other hospitals as requested. Permanent civil defense identification cards have been issued to all physicians requesting them. Such identification, which enabled physicians to move in and out of the large areas of the city protected by police and guardsmen, was quite important during the disaster.

Approximately a month prior to the June 8 tornado, on May 12, a meeting attended by selected administrative personnel from all city hospitals was held at the Winter Veterans hospital. At this meeting the county medical society disaster plan was reviewed, together with the general civil defense disaster plan for the city and county. Specific hazards were discussed and the possibility of a tornado disaster was considered the most likely serious threat. A slide composed of information on major disasters due to tornadoes occurring in the country, showing casualty figures, was one of a series of slides discussed.

In brief, the county medical society disaster plan estimated that the three hospitals serving the public would bear the load of any disaster and that approximately 400 major, together with minor, casualties could be handled by the hospitals. The large Winter Veterans facility was planned to be used as a back-up facility to which could be evacuated transportable patients from the other three hospitals, if the casualty load became greater. This hospital also would serve as a pool area for all unassigned health personnel. As casualty loads increased, dispersal from the Winter Veterans hospital, together with necessary medical and nursing personnel, would be made into a complex of the State mental and Menninger hospital facilities also located on the western edge of the city which, it is estimated, could handle well over a thousand portable bed patients. Should an overwhelming disaster occur which would make it mandatory to transfer patients out of the city, railroad lines and roads readily available west of the city would open the northwestern part of the state (away from the eastern, heavily-populated centers) to handle casualties from the Topeka area. The plan for emergency hospital facilities in case one or more of the city hospitals were destroyed, including storage location of two civil defense 200-bed emergency hospital units, was also discussed. One problem which has not been solved, and apparently has remained inadequate during most major disasters, is that of medical and hospital communications. This was discussed at the meeting held on May 12, and it was agreed that such facilities were of extreme importance in the uninterrupted flow of casualties from the scene of a disaster into reception hospitals and on into back-up hospital facilities; for alerting and dispersing medical and nursing personnel, and for the flow of needed supplies from areas of storage to active centers. Adequate communication

equipment for medical and hospital services were not available during the Topeka disaster. Many other problems, such as the number of units of whole blood on hand at each hospital, amount and location of blood units in the county medical society blood bank, sources of litters and sources of medical and hospital supplies were brought up and discussed. Fortunately, blood supplies within hospitals were adequate to meet demands; other supplies were also sufficient, with the exception of tetanus toxoid and sutures.

No community is ever ready for a major disaster, but those individuals and organizations responsible for the care of injured persons in Topeka were aware of their problems, and had made plans and were active in their preparation to meet the needs of the city should a disaster occur.

Problems Encountered and Possible Solutions

(1) Any hospital or its environment when suddenly confronted with an overwhelming, crowding mass of injured persons, their relatives, friends and vehicles, is in a defenseless position. This tidal wave of humanity takes place immediately following a disaster and before official relief organizations can swing into action. Certainly, the efficiency of the hospital to render service is greatly reduced. It would appear logical to assume that only personnel working in and about the hospital at the time would be available to control such a situation at the start. It is suggested that hospital personnel be assigned, trained and given authority to police the environment, entrances, hallways and emergency rooms of the hospital. The orderlies, nurses or others should be trained to immediately report to the emergency entrance and assist casualties into the triage or assembly area so as to eliminate the need for relatives or friends to enter the hospital and to speed the departure of vehicles. It is recommended that patrolmen or auxiliary patrolmen be trained and assigned to these duties to take over the policing task as soon as possible.

(2) The inadequacy of records kept on all casualties can be eliminated by assigning and training clerical personnel of the hospitals to handle all emergency tagging, filling out the tags and records as the physician examines each injured person. Colored tags would aid in speeding the flow of casualties to designated areas. Such tags should be kept in the emergency rooms at all times. Regular hospital records should be used on all casualties hospitalized. A final summary sheet, which would include minor injuries, should be maintained on all casualties. This summary should be compiled from information on minor casualty tags and regular inpatients' casualty records.

(3) Hospital staffing for emergency services, in-

cluding all personnel, doctors, nurses, orderlies, janitors, maintenance men, clerks, and administrators should have definite assignments, be given instructions as to duties to be performed and an opportunity for training in those services. All key positions should have at least one or more persons assigned to those duties. All official hospital workers on active duty during an emergency should have on their persons an identifying tag or emblem.

(4) All regular hospital patients should have a small flag or sticker on their chart which would indicate that it was the opinion of the attending physician that this particular patient could be or should not be released or transferred from the hospital should an emergency need for additional beds occur. This sticker could be kept current with the changing conditions of the patient.

(5) Assigned transportation units should be made to each hospital so that when needed these units would be available to the hospital to transport patients to their homes or back-up hospital facilities. The evacuation area should be apart from the admissions or emergency entrance.

(6) Power failure should be anticipated and all areas of the hospital, including equipment outlets, which are to be used for disaster services should be on standby or auxiliary power sources. Routine inspection of the functioning of auxiliary power in all assigned areas should be done on a regular basis.

(7) Foolproof and disaster-proof long and short emergency communication systems should be developed for hospital and medical services. There will be a need to notify (through radio and television stations, if operating, and if not, through the hospital's own system) personnel to report for immediate emergency service. Communications within the hospital must be assured as available when needed at all times. Such equipment should be checked against all the problems known to arise during a disaster.

(8) Organized ambulance services should be available for transportation of seriously injured persons. This must be done through a centralized communications center in touch with ambulances, hospital and the disaster area workers. Such services can be emergency civil defense units or regularly functioning community or private ambulance services. Coordination of activities is a necessity.

(9) Emergency or disaster morgues should be designated. Those persons who are unquestionably dead should be taken by ambulance drivers to morgues instead of to emergency hospital rooms. Coroners (physicians) should be at such designated morgues.

(10) Nothing will minimize confusion and mistakes in the functioning of any organized community effort as much as training and repeated drills of personnel in their assigned tasks.

Regional Medical Programs

—For Heart Disease, Cancer, Stroke and Related Diseases for Kansas

JACK D. WALKER, M.D.* *Kansas City, Kansas*

Historical Background

EARLY IN 1964, IN A MESSAGE to Congress, President Johnson announced his intent to form a Presidential Commission to study the problems of heart disease, cancer and stroke and recommend steps to conquer these major diseases. The Commission was appointed on March 7, 1964, under the chairmanship of Dr. Michael E. DeBakey and the findings of this Commission were submitted to the President in December of 1964—the now famous DeBakey Report. From the recommendations, legislative bills were introduced and the usual legislative machinery put into action. The basis for the legislative bills came principally from the recommendations from the DeBakey Report as follows:

Recommendation 1. The Commission recommends the establishment of a national network of Regional Heart Disease, Cancer and Stroke Centers for clinical investigation, teaching and patient care, in universities, hospitals and research institutes and other institutions across the country.

Recommendation 2. The Commission recommends the establishment of a national network in Diagnostic and Treatment Stations in communities across the nation, to bring the highest medical skills in heart disease, cancer and stroke within reach of every citizen.

Recommendation 3. The Commission recommends that a broad and flexible program of grant support be undertaken to stimulate the formation of medical complexes whereby university medical schools, hospitals and other health care and research agencies and institutions work in concert.

The immediate reaction of organized medicine, the American Medical Association, the Association of American Medical Colleges, the Academy of General Practice, voluntary health agencies and others, was acceptance of the philosophy and the goals of the legislation but almost total opposition to the proposed concepts for achieving the goals. As a result of testimony in committee hearings, the original bill was altered and an entirely new bill was written, and it was this new bill, HR3140, which ultimately was passed by both houses of Congress and signed into

law. This new bill offered an entirely different concept from the original DeBakey Report—indeed, even the title was altered. Unfortunately, most of the press coverage and publicity surrounding this legislation

Regional Medical Programs for Heart Disease, Cancer, Stroke and Related Diseases or Public Law 89-239, Section 2, Title IX, as passed by the Eighty-Ninth Congress and signed into law on October 6, 1965, by President Johnson, ranks among the more controversial and less understood pieces of major federal legislation to come along in recent years. The purpose of this paper is to, hopefully, reduce the controversy, improve the understanding of this law, and review the development of the program in Kansas. This seems particularly appropriate and important to the Kansas physician, Kansas health agencies, and the Kansas citizen, since the University of Kansas Medical Center, acting as the designated official state agency, is now developing a Regional Medical Program as one of the first planning grants awarded under this law.

came out in the context of the original DeBakey Report and very little information was made available to the public and to organized medicine concerning the law as it was finally written. This 180 degree turn in concept has created in its wake much confusion and misunderstanding.

The law as enacted places the emphasis on education, clinical research, training of manpower and demonstration of clinical care of patients on a regional basis, and on cooperation between hospitals, medical practitioners, medical educators, state, federal and local health agencies and all other agencies involved with health care. It broadens the categorical approach to disease to include "related" diseases. Much emphasis is placed on local and regional encouragement to

* Associate Dean, University of Kansas Medical Center.

develop ideas and programs. Cooperation in efforts across state lines and county lines is encouraged. The fundamental philosophy remains unchanged; that is to attack and conquer heart disease, cancer, stroke and related diseases and to do this through education, both professional and lay, improved patient services, and continued research, both research at the basic level of the disease entities and also research into new methods of continuing education and the delivery of patient services. This philosophy is to be implemented with no interference in the traditional practice of medicine.

When it became apparent that this new legislation would become law, the Dean of the Medical Center, Dr. C. Arden Miller, in consultation with Governor William Avery, began plans to initiate a request for funds for a planning grant. Governor Avery designated the Medical Center as the official state agency to make application for a grant and he appointed—as required by law—an Advisory Council with broad representation from the health fields in Kansas. The original Advisory Council was as follows:

*Dr. Frank F. Allbritten, Jr., Professor and Chairman of Department of Surgery, University of Kansas Medical Center, Kansas City, Kansas.

Mr. Ivan D. Anderson, Executive Director, Kansas Health Facilities Information Service, Inc., Topeka, Kansas.

Mr. Robert Anderson, Chairman, Kansas State Board of Social Welfare, Ottawa, Kansas.

*Dr. John R. Carter, Professor and Chairman of Department of Pathology and Oncology, University of Kansas Medical Center, Kansas City, Kansas.

Mrs. Edward Curry, Member Board of Directors, Kansas Heart Association, Topeka, Kansas.

Dr. Mahlon H. Delp, Professor and Chairman of Department of Medicine, University of Kansas Medical Center, Kansas City, Kansas.

Mr. Frank L. Gentry, Executive Director, Kansas Hospital Association, Topeka, Kansas.

Mrs. Georgia Neese Gray, Member Board of Directors, Kansas Division, American Cancer Society, Richland, Kansas.

Dr. Charles E. Lewis, Professor and Chairman of Department of Preventive Medicine and Community Health, University of Kansas Medical Center, Kansas City, Kansas.

Dr. Russell C. Mills, Professor of Biochemistry and Associate Dean of the Medical and Graduate Schools, University of Kansas Medical Center, Kansas City, Kansas.

Dr. Robert C. Polson, Chairman, Kansas State Board of Social Welfare, Kansas State Board of Health, and Practicing Physician, Great Bend, Kansas.

*Mrs. Neila Poshek, Consultant and Nursing School Examiner, Kansas State Board of Nursing, Topeka, Kansas.

Dr. Robert W. Weber, Chairman, Committee on Medical Schools, Kansas Medical Society and Practicing Physician, Salina, Kansas.

*Dr. C. Arden Miller, Provost and Dean, University of Kansas Medical Center, Kansas City, Kansas.

The Advisory Committee serves to assist in planning activities and to evaluate and make recommendations on all proposed operational grant applications.

In the spring of 1966, the staff at the Medical Center with the advice of the Advisory Committee, prepared and submitted a request for a planning grant under Regional Medical Programs. The first five grants were awarded in May of 1966, and the State of Kansas received one of the first five grants in the nation. This was a planning grant to plan and develop suggested programs which would, in turn, be submitted to the Advisory Committee and then be forwarded to the office of Regional Medical Programs for approval and operational funding.

During the summer and fall of 1966, utilizing members of the Medical Center Staff, considerable time was spent in clarifying and understanding the goals of this new federal program. A small clerical staff was recruited and an office was established at the Medical Center. Discussions were held with representatives of organized medicine, hospital organizations, State Board of Health, and various voluntary health agencies. A number of discussions with federal health officials took place. Out of these discussions there began to emerge by late fall a clearer picture of the program goals. A few principles had by then been established.

1. Regional Medical Programs are primarily programs of continuing health education utilizing not only existing modalities, but seeking, through research, new and more sophisticated methods of transferring health knowledge and information to all members of the health care team and to the lay consumer.

2. Regional Medical Programs emphasize community and regional cooperative endeavors. The University of Kansas Medical Center would act primarily as the catalyst, supporting, coordinating and evaluating a wide variety of proposals in the areas of continuing health education and health manpower training, the total effect to be directed toward an all-out assault on heart disease, cancer, stroke and related diseases for the ultimate benefit of the people in the State of Kansas and in the region.

3. In addition to efforts directed into the State of Kansas, special attention and cooperative planning would be directed to the complex Kansas City metropolitan area which crosses the Missouri-Kansas state boundary and crosses six county boundaries. Close communications were established with officials of the

* Dr. Jack Carter, Dr. Frank Allbritten, Mrs. Neila Poshek, and Dr. C. Arden Miller have left the Advisory Committee. Replacement appointments and enlargement of the Advisory Committee is anticipated in the near future.

Regional Medical Programs for Missouri. The University of Missouri Medical Center, acting as an agent for the State of Missouri, had also received one of the first five planning grants. A special metropolitan area advisory committee was established to assist in the planning for this complex area. This advisory committee was made up from representatives of the Missouri Regional Medical Programs and the Kansas Regional Medical Programs.

4. A general, but flexible, format was established for the planning. This format called essentially for a common blueprint:

Phase I: To evaluate and gather existing data concerning health education, health manpower, health facilities, and the present status of categorical diseases in the region.

Phase II: To encourage local programs at the community, state and regional levels which would seem to offer an improved attack against the categorical diseases.

Phase III: To submit operational grant applications to implement programs which offered new and bold approaches.

Phase IV: To evaluate continually the results of such operational programs over a period of time to determine the success or failure of such an approach.

This, then, is the general flexible direction of Regional Medical Programs in Kansas. Dr. Russell Mills, Associate Dean of the University of Kansas Medical Center is acting as the coordinator of the program at the Medical Center.

Phase I of the planning has begun primarily under the supervision of Charles Lewis, M.D., Chairman of the Department of Community Health and Preventive Medicine at the Medical Center. This is the data collecting-fact finding phase.

Phase II is slowly getting underway with a number of local community groups, voluntary health agencies, and state and regional groups beginning to meet together to study the program and generate ideas.

Phase III, the operational grant application phase, deserves some special comment. Only a very limited number of small operational applications have been introduced from the metropolitan area planning program. None, thus far, have appeared from the community or state level, and properly so, because not enough time has elapsed for community groups to have developed operational proposals. One large operational grant application deserves comment. The University of Kansas Medical Center was asked by the NIH Division of Regional Medical Programs in Washington in September of 1966 to prepare and submit an operation grant application over and above the original planning grant. This request was made by the national office in Washington in order to gain some knowledge and experience from several areas of the country about the approaches and methods

which might be anticipated in future operational grant requests. This initial operational application was written by the Medical Center staff with the advice and consultation of a number of individuals and organizations within the State of Kansas and the metropolitan Kansas City area. The application includes a number of proposed operational projects. All are based upon the format described earlier and are primarily designed as pilot projects which would be successful projects in themselves and which would also serve to provide the Medical Center staff, as well as the staff in Washington, with experience and information which would be helpful in evaluating and designing future operational programs. The operational grant application from the Medical Center is currently under consideration by the application review committee at the NIH Office in Washington. Approval of this operational grant application would allow the proposed pilot projects to become operational sometime in the late spring or early summer of 1967. Other operational project grant applications will be studied and submitted as they are proposed. Planning activities will continue at the community, state and regional levels under the original planning grant.

The historical background of the federal law which establishes funds and guidelines for Regional Medical Programs for Heart Disease, Cancer, Stroke and Related Diseases, has been reviewed. Events surrounding involvement of the University of Kansas Medical Center and the State of Kansas in one such Regional Medical Program have been reviewed. A great deal of progress has been made during 1966 in establishing the necessary underlying foundation upon which to build the program. Activities should accelerate in the second year of the program.

The impact of this program upon the health of the citizens of Kansas, upon the providers of health services, and upon health agencies within the region can be very great. Continuing health education efforts in Kansas as a cooperative adventure between the University of Kansas Medical Center, organized medicine and state and voluntary health agencies has enjoyed success and national prestige for many years. Regional Medical Programs provide the funds and mechanics to continue these efforts in more depth and in new and more sophisticated ways, and to extend it beyond physicians to all members of the health care team and to the consumer of medical services. It provides the potential for doing better what we in Kansas have already been doing well.

Perhaps of even greater ultimate importance, Regional Medical Programs appear to be the first of several health programs which embrace the popular concept of collective federalism in which a truly cooperative adventure between the federal government, regional, state and community agencies, will be carried

out in an attempt to improve the health of our society. It marks one of the first major federal health programs in which funds are allocated by the Federal Government to be administered at the local level for projects generated at the local level in a collective or cooperative approach. Already, a second major piece of federal health legislation has come along which embraces this same philosophy. Federal Law 89-749—the Comprehensive Health Planning and Public Health Services Amendment of 1966—provides funds and guidelines for planning state-wide comprehensive health programs. Regional Medical Programs for Heart Disease, Cancer, Stroke and Related Diseases and Comprehensive State-wide Health Program complement each other in many ways. Both emphasize the concept of collective federalism with heavy emphasis on cooperative planning by a diverse group of agencies and people involved in the health fields. Both programs emphasize the importance of minimal interference in the traditional concepts of the private sector of medical practice.

William Stewart, Surgeon General of the United States, speaking of the recently enacted major federal health programs said, "I am convinced that we are taking an important step toward solving a number of the problems with which all of us are deeply concerned. I believe that by entering freely and fully into a partnership, we can eliminate many of the difficulties that have resulted in fragmentation of effort, here

in Washington and across the nation. More importantly, by so doing, I believe we can generate the social action necessary to deliver the nation's full potential for advancing the health of the American people."

Kansas may be able to achieve for its citizens this full potential for health ahead of most other states. Regional Medical Programs for Heart Disease, Cancer, Stroke and Related Diseases offers a beginning in that direction.

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REFERENCE LISTS

How long should reference lists be? There is rather general agreement that in most of the articles in state journals a list of five or six references will usually be adequate. Except in special review articles, or research articles, complete lists of references are not needed, and, in fact, are out of place. A general guide is to include in a reference list: (1) Only articles which have actually been read in the original (not an abstract or a translation) and (2) Only articles which are actually mentioned in the text of the paper.

How many reference numbers should be in the text? Remembering that they are distracting to the reader as he goes through the article, they should be eliminated if they serve no purpose. If a quoted author appears in the reference list only once, it is obvious that this is the article to which reference is made, and no "superior number" is necessary for it cannot be confused. Papers are written to be read, and it is desirable to keep them interesting and to avoid distractions whenever possible.



An Account of the University of Kansas School of Medicine

RALPH H. MAJOR, M.D., Kansas City, Kansas

(Continued from March)*

The postgraduate medical education program, which has loomed so large in recent years, began in reality before the First World War, when Dr. S. J. Crumrine in 1911 established a refresher course for physicians serving as health officers in the various counties. In addition to lectures on public health, many topics in medicine, surgery, and contagious diseases were discussed. I think we are justified in regarding this course as the ancestor of the present far-flung establishment with its heart at the Medical Center.

From the days of Crumrine to the present, these postgraduate courses have been given at the University of Kansas School of Medicine. The development and success of these courses have been associated particularly with the name of Harold G. Ingham, at first the director of postgraduate education at the University of Kansas in Lawrence but, since 1947, Executive Director of Postgraduate Medical Education in Kansas City. Mr. Ingham travels countless miles throughout the state, planning courses, ascertaining the wishes of the doctors in various localities, getting information regarding the reactions to certain courses, in short, taking the medical pulse of Kansas in things educational.

This department first made its formal bow in the catalogue of 1945-47 with Dr. Edward H. Hashinger as chairman of the department and Mr. Ingham as executive director. After five very successful years in this position, Dr. Hashinger, in 1952, resigned to become professor of gerontology and was succeeded by Dr. Mahlon Delp (*Figure 58*). Both of these chairmen threw every effort into the success of this department, and cumulative results of their efforts

and those of Mr. Ingham are shown in the statistics for the academic year of 1953-54. During this period, 19 postgraduate courses were given at the University of Kansas Medical Center, as well as circuit courses given six times in eight Kansas towns and in three Missouri towns. The enrollment in these courses is impressive—physicians, 1,795; nurses, 314; technicians, 133; laymen, 353; a total of 2,595. The number of physicians enrolled (1,795) was the largest number in any postgraduate course in the country.

In 1953, this important ancillary course found a permanent home in the Continuation Center-Student Union Building (*Figure 59*), completed and dedicated that year. The genesis of this building dates back to 1944, shortly after the death of Dr. Francisco, when a movement was started by students to erect a memorial to him. As time went on and ideas crystallized, it was decided to build a student union building, part of which would be a Francisco memorial. A campaign for funds was inaugurated, but the outbreak of World War II ended the campaign before sufficient funds had been collected. After the war, an active campaign was waged under the leadership of Dr. Hashinger, and a total of approximately \$200,000 was collected. About the same time, a grant was received from the Kress Foundation to extend postgraduate instruction, which included \$150,000 for building purposes, and Mrs. E. H. Hashinger gave the Medical School \$100,000 to erect an auditorium in memory of her son, Dr. Jesse R. Battenfeld, Jr., who lost his life while in the service of his country in World War II. These three projects were combined with the result that there is the Continuation Center-Student Union Building with its superb Battenfeld Auditorium, which seats 800 persons, thus providing space for recreation, dining, lectures, and a limited number of rooms which visiting doctors

* This installment concludes Dr. Major's account of the early days of the University of Kansas School of Medicine.

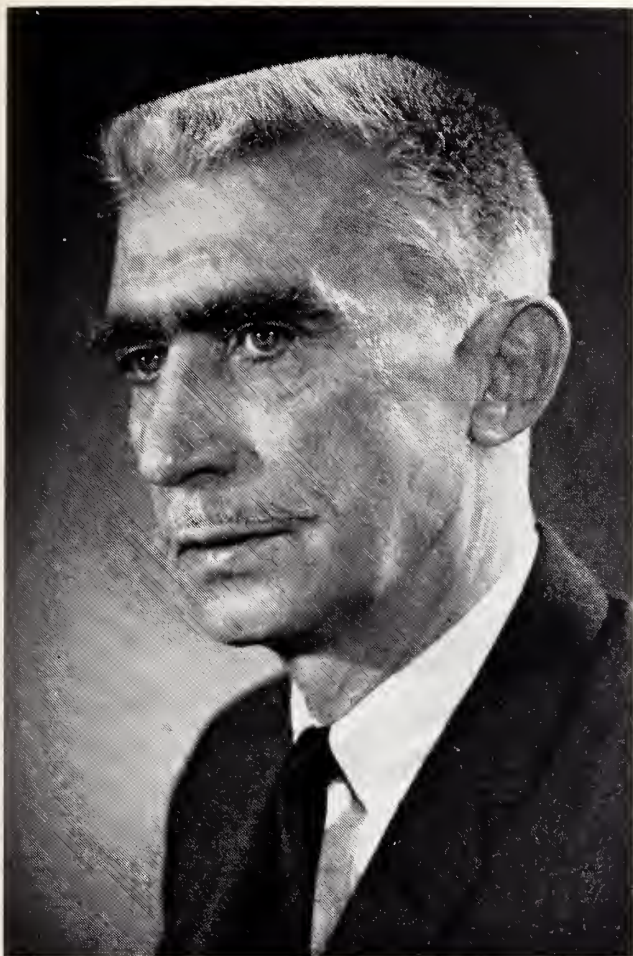


Figure 58. Dr. Mahlon Delp

may occupy. The entire building represented an investment of \$500,000.

Another rapidly growing and important adjunct to the regular curriculum is the preceptorship, by provisions of which each student, following completion of the third year, spends five and a half weeks "under the supervision of a preceptor or group of preceptors in a small community in the State of Kansas." This type of teaching was frankly modelled after the plan instituted in Wisconsin by Dean Bardeen and was introduced into Kansas by Dean Wahl in the early 1930's. This preceptorship was, at first, on an elective basis and usually for three months. During the war years, it was of necessity abandoned but again introduced with the cessation of hostilities. At the present time, students are required to take a preceptorship for five and a half weeks and to serve an equal length of time in one of the four mental hospitals. The list of preceptors who generously assist in the education of medical students totaled 61, in 1955.

The growth of the department of dietetics and nutrition, particularly since Miss Ruth Gordon (*Figure 60*) took charge in 1947, has been phenomenal. This department gives advanced courses to students of dietetics, students of medicine, internes, and residents, assists materially in planning the diet of patients in the hospital and in the outpatient department, and, as if these manifold activities were not sufficient, this department, under the supervision of Miss Esther Ratliff, prepares and serves some 2,000 meals daily!



Figure 59. Student Union-Continuation Center



Figure 60. Miss Ruth Gordon

With these last notations, the history of the first half century of the Medical School comes to a close. I have said little regarding the history of the department of nursing because of my own incompetence in this field. This department has kept pace with the other departments of the Medical School and deserves a history written by one who is familiar with its past and present.

A comparison of the present day Hospital and Medical School with the somewhat forlorn group of buildings that greeted my eyes as I first climbed up the hill from Southwest Boulevard is both striking and revealing. The total cost of the buildings on the old site was \$120,000, whereas the cost of the buildings on the present site totals \$6,760,705. The increase in the number of the faculty and students is also striking. The catalogue for 1914 shows 66 faculty members and 105 students; in 1953-54, the faculty numbered 370 members, the student body 453. The number of courses offered in the catalogue reflects the increases described.

A closer look at the various departments of the Medical School is even more revealing. The department of pathology, in which I made my first appearance in Kansas, had initially one professor and one part-time student assistant. The present department of pathology and oncology, whose head is the able and energetic Dr. Robert Stowell, has, according to the recent catalogue, two professors, two clinical

professors, six associate professors, one associate clinical professor, six assistant professors, two associates, six instructors, ten fellows and residents—a total of 35. As to its budget, which is not publicly proclaimed from the housetops for fear of exciting the envy of other departments, it greatly exceeds the budget of the entire Medical School in the pre-World War I era.

The department of bacteriology is no longer wedded to Pathology, who has a new mate—Oncology. Bacteriology as a department has disappeared along with such bacteria as the tubercle bacillus, which is now a *Corynebacterium*, and the typhoid bacillus, which was recently the *Eberthella*—and mispronounced at that. Bacteriology has been rechristened Microbiology and is a separate department under the leadership of Tom Hamilton, an extremely well trained and excellent worker, aided by a staff of eight.

The department of medicine, under the able leadership of Dr. Grey Dimond (Figure 61), carries on an active teaching program not only at the Medical Center but also at the Veterans Hospital and at Menorah Hospital. Both resident and intern training has reached a high level of excellence, and the sub-department of cardiology is notable for its contributions to the welfare of cardiac patients as well as to the advancement of our knowledge in this important

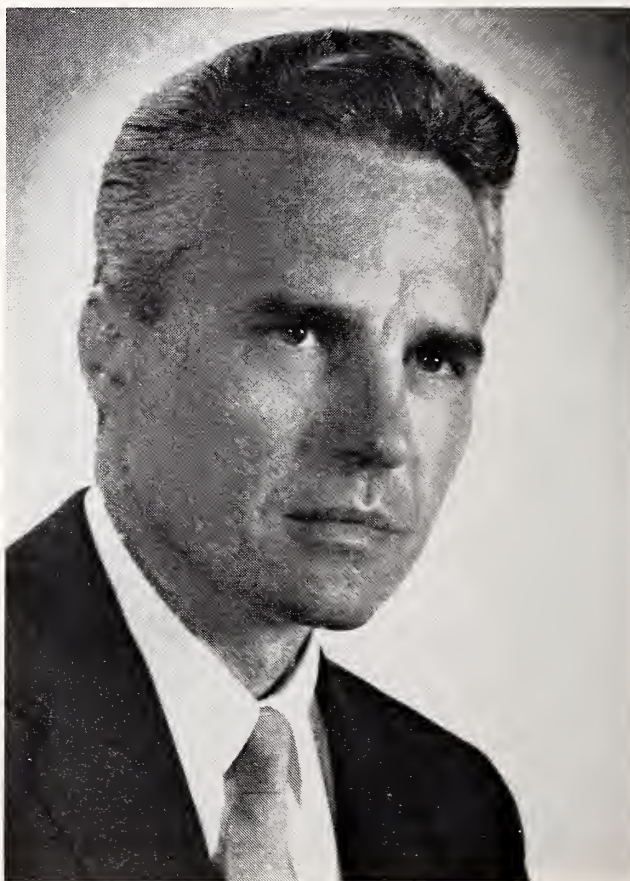


Figure 61. Dr. E. Grey Dimond



Figure 62. Dr. Sloan Wilson

of detail and equipment which would positively stun the John Farbairn Binnie of 1906. In the old days, the students in the surgical amphitheatre sat by the hour looking down at the operating table and wondering what was going on. Now they sit in the amphitheatre, see the huddled group around the field of operation, but look up at the television screen and see, just as clearly as the surgeon himself, what the lesion is and how it is being treated. This revolution is the work of Dr. David Ruhe, chief of the department of audio-visual education, a recent and valuable addition to the staff, who is making important contributions to the effectiveness of our medical teaching.

After the departure of Dr. Sudler, the surgical department, until 1949, was headed by that young man described in the catalogue of 1915-16 as "Mr. Orr." In the intervening years, he has gained national and international prominence as a surgeon and has written a notable book on operative surgery, *Operations of General Surgery*, which has met with universal favor and acclaim. It has been translated into Spanish. In 1949, he received perhaps the highest honor that could be conferred by his surgical colleagues—the presidency of the American Surgical Association.

The present chief of the surgical service, Dr. Frank Allbritten, Jr. (Figure 63), an old Kansas medical student who received his medical degree at the Uni-

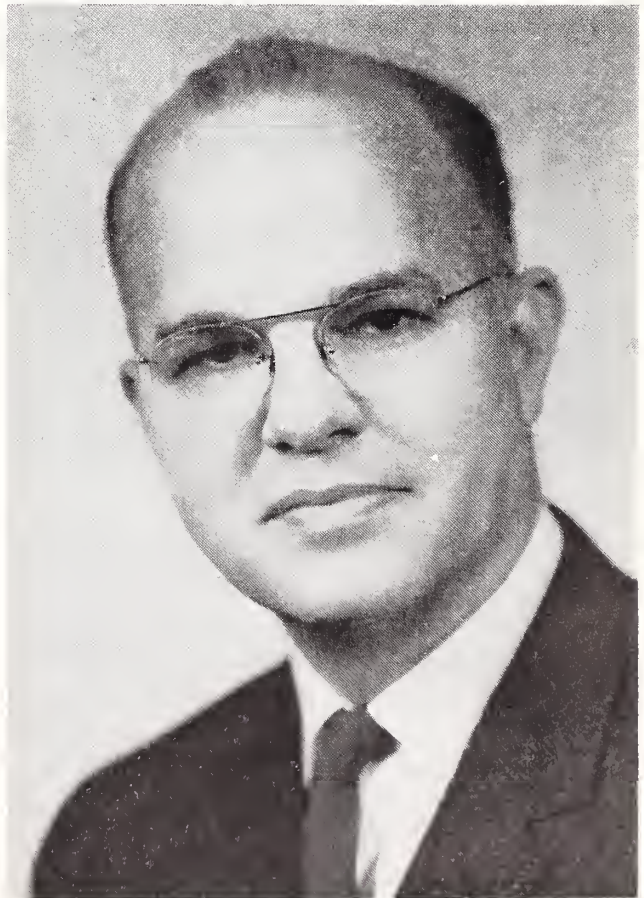


Figure 63. Dr. Frank Allbritten, Jr.

field. The sub-department of hematology, directed by Dr. Sloan Wilson (Figure 62), in this era of blood transfusions, is one of the most active departments of the hospital and, in addition, is making important contributions to the science of hematology. The sub-department of pulmonary diseases, including tuberculosis, has only recently been established with Dr. Martin FitzPatrick as chief. Already its favorable impact on the treatment of patients and on the instruction of students has been felt.

Menorah Hospital and the Veterans Hospital have made a noteworthy contribution to the teaching of medical students. In the former, the teaching has been under the direction of an old "wheel horse" of the Medical School, ably assisted by two of our exceptionally qualified former graduates, Dr. Harry Statland and Dr. Morris Statland. At the Veterans Hospital, the Medical School has been extremely fortunate in having as chief of the professional services Dr. Tom Rankin, an unusually gifted teacher, who has that most necessary of all qualifications—the love of teaching.

Surgery, no longer sharing its operating rooms with other departments who lacked classrooms, now has an elaborate series of operating rooms, with perfection

versity of Pennsylvania and soon achieved distinction in the surgical field, was called only last July (1954) from Philadelphia. Associated with him are Dr. William Williamson, chief of neurosurgery; Dr. David Robinson, head of the division of plastic surgery; Dr. William Valk, chief of urology; and Dr. James Weaver, chief of orthopedic surgery—all distinguished surgeons and leaders in their fields. Another indispensable member of his group is Dr. Ralph W. Edwards, assistant clinical professor of surgery, who is an extremely competent dental surgeon whose advice and operative skill are invaluable in the treatment of the numerous dental complications constantly encountered in an active hospital.



Figure 64. Dr. Herbert Miller

The department of pediatrics, under the masterful direction of Dr. Herbert Miller (*Figure 64*), the immediate successor of Frank Neff, has expanded and grown in a few years to an extent that would have delighted Frank, had he lived to see it.

Psychiatry, under the direction of Dr. William Roth, Jr., after living a sort of stepchild existence in the abandoned hospital at the old site, is watching with pride and joy the erection of a new and handsome psychiatry building to cost in excess of one million dollars.

The department of otorhinolaryngology is directed by Dr. G. O'Neil Proud, who succeeded Dr. Sam Roberts in 1950; Dr. Richard Sutton, Jr., heads the

department of dermatology; Dr. Albert N. Lemoine, Jr., became professor of ophthalmology in 1952, in succession to Dr. John A. Billingsley, who resigned in 1950 after serving for five years. All of these have added stature to their departments and to the Medical School.

In Lawrence, Dr. Kenneth Jochim has succeeded Dr. Stoland as professor of physiology; Dr. Paul Roofe is professor of anatomy; and Dr. Russell Mills is professor of biochemistry. These three men are individuals of unusual intellectual attainments, excellent teachers, and are carrying out important scientific investigations.

When Dr. Franklin Murphy became dean of the Medical School in 1948, he was the first full-time dean in the history of the institution. On his resignation to become chancellor of the University in 1951, he was succeeded by Dr. Edward H. Hashinger as acting dean and, the following year, by Dr. W. Clarke Wescoe (*Figure 65*), who has won the full confidence and affection of the faculty, the student body, and the medical profession of the state. He does not yet, perhaps, belong to those who have made history but, rather, to those who are making it. He has two assistant deans—Dr. Mahlon Delp, who is perhaps something like Dr. Nathan Smith, who, as Oliver Wendell Holmes remarked, "filled not a chair,



Figure 65. Dr. Clarke Wescoe

but a whole settee of professorships"; and Dr. Vernon Wilson, a comparative newcomer to our midst, who has won a host of friends in both the faculty and student body by his innate fairness, geniality, and intellectual integrity.

The *Kansas City Times* of January 15, 1955, states that the Medical Center "is fast becoming one of the top tourist attractions in the state." It continues,

The medical center continues to grow. Dr. W. Clarke Wescoe, dean of the school of medicine, said the fifteen-acre site now has seventeen buildings. . . . The center is a small city itself, with more than 4,000 persons, counting 1,500 employees, 600 students, and 1,600 staff members plus patients going in and out daily.

The 600 students include medical students, nurses, laboratory technicians, dietitians, physical therapy, speech and hearing students.

The functions of a medical center can be narrowed down to three—to educate capable physicians and to give them opportunities for further study, to educate capable technicians, dietitians and nurses; to care for the sick and afflicted of the state and community; and to advance medical science. This Medical School since its foundation has graduated 2,500 doctors, who have been a credit to the University of Kansas and to the medical profession. It has taken care of large numbers of sick and afflicted, and the State of Kansas has shown its gratitude by building the magnificent plant we now occupy. The contributions of the Medical School to the advancement of medical science have flowed in a steady but increasing stream through the years, and their volume today is impressive.

This increased interest and activity in research has been substantially aided by private donations from interested friends, either by personal gifts or by gifts from foundations. Mr. Henry Haskell left a bequest of \$100,000 for the investigation of cardiovascular disease; the American Cancer Society has contributed most liberally to the department of pathology and oncology, and the American Heart Association to the department of internal medicine. In 1954, the McIlvain Biochemical Cardiovascular Laboratories, under the direction of Dr. Santiago Grisolia, were dedicated with appropriate ceremonies. This latest addition was due largely to the initiative of Dr. Sam Roberts, medical advisor to the trustees of the Frederic Ervine McIlvain Memorial Fund.

A final question naturally poses itself. Is the present medical graduate better than his ancestor of 1914, who had the advantage of a closer, more personalized, more "practical" instruction even if they did not work in such "palaces" and have at their beck and call so many chemical tests and mechanical gadgets? Is the present day graduate less human, less resourceful, less reliant on his own intellectual powers, or is he more of a mechanical robot who relies mainly on slide rules, nomographic charts, electrocardiograms, and liver "profiles"?

I see some students who seem to know more about certain tests that have a great and probably ephemeral popularity than about some of the fundamental findings of physical diagnosis, that were important a thousand years ago and will be important a thousand years hence. But, invariably, such students reflect the interests of some instructor. Personally, I am convinced that the vast majority of instructors are teaching more, teaching better and that the students know more than ever before. I asked an old colleague recently what he thought of the present day medical students. "Pretty sharp," he answered. I subscribe, carefully pointing out that the word is to be taken in a favorable sense.

THE END

NEW BIRTH DEFECTS CENTER

A Birth Defects Evaluation Center, made possible by an \$8,492 allocation to the Sedgwick County Chapter of the National Foundation—March of Dimes, has been established at St. Francis Hospital, Wichita. The announcement of the new Center was made January 12 at a news conference at the hospital.

The Center will offer a comprehensive team approach in the diagnosis of children afflicted with multiple defects, and will involve, although not necessarily simultaneously, pediatricians, orthopedic surgeons, urologists, general practitioners, psychiatrists, psychologists, medical social workers, and other appropriate personnel.

Coordinator for the Center will be Dr. J. H. Holt, Director of Medical Education at St. Francis.

The Center is designed to provide a service for determining the possibility of medical or surgical correction, educability or trainability, and psychosocial adjustment potential for victims of birth defects.

When an accurate diagnosis is established, the Center then transmits the information including results of laboratory tests, x-rays and other diagnostic procedures, to the referring physician and recommends a plan of treatment for the individual patient.

The establishment of this Center will fill a long-standing void, in that this has been the largest geographical area in the United States without a facility for diagnosis or therapy of birth defects. It will serve a population of approximately one million people living within a radius of 100 miles of metropolitan Wichita. The Center is the 78th of a rapidly increasing network of National Foundation-financed Centers being established in this country to combat birth defects.

Current plans call for the Center to be opened in February and conducted on a twice monthly basis. Patient utilization may dictate the expansion of the twice monthly schedule. The Center will be located in the Out-Patient Department of the hospital. Patient referral will be by physician only.

The President's Message

DEAR DOCTOR:

As this is the final President's Page under my tenure, it is written with some sadness and despair. Where does the time go? To look back over the year, one can see many problems, many have been solved and some are unsolved. One can see much work accomplished and some work undone. There are a few heartaches and much happiness.

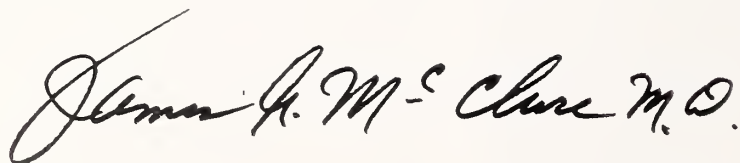
Probably the greatest task this year has been the ever continuing problem of trying to live with the medically bad legislation of Congress and still trying to preserve the integrity of the physician and free enterprise.

At the time of this writing, I wish I could report to you specifically the precise status of our Title XIX legislation. This will be known to you all by the time of our May meeting in Kansas City, Kansas. Our time spent considering the merits of the various methods of implementation was well spent. It is also reassuring to know that Kansas Medicine has many friends in the legislature, both in the House and Senate, who are as concerned as we are regarding Medicine's future. Were it not for this fact, we could not have convinced our legislators to write into the bill our main considerations.

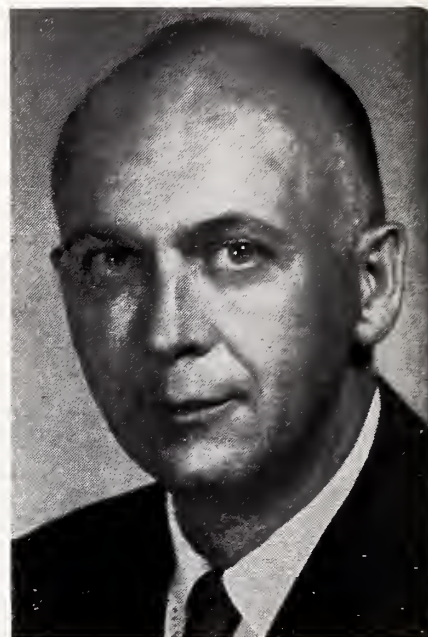
Your reply to my questionnaire was overwhelming and needless to say was most helpful. Let us hope that our final days on this responsible duty can be as successful as the former ones.

I would also like to take this moment to thank the many members of the various commissions and their committees for their fine work. Their tasks are not completed but they are well started in a good constructive manner. May I extend my own personal "Well done to all hands." . . . Finally, I would like to extend to the membership my sincere thanks for the pleasure I have had in being your President this year.

Cordially yours,



President



Welcome to Kansas City

Welcome fellow members of the Kansas Medical Society to Wyandotte and Johnson Counties. We extend to you a most hearty invitation to join us in the forthcoming Kansas Medical Society meeting in the Kansas City area, April 30, May 1, 2, 3, 1967. We hope to present to you, for your amazement and amusement, a most interesting scientific and non-scientific program. Headquarters will be the Town House Motor Inn.

The scientific program will deal with certain aspects of aerospace medicine and there will be some of the most outstanding authorities in the country to speak to you of astronautology and the various other phases of space travel and medicine.

The non-scientific portion of the program will deal with various phases and fields such as golf, skeet-shooting, bowling, fishing, a stag dinner followed by the Bouncing Dominos.

Our local committees are working hard to make this one of the best annual meetings yet. We are looking forward to seeing you in a few weeks.

William R. Brown, M.D.

President, Johnson County
Medical Society

Philip C. Nohe, M.D.

President, Wyandotte County
Medical Society

108th Annual Session, Kansas Medical Society

Sunday, April 30, through Wednesday, May 3, 1967

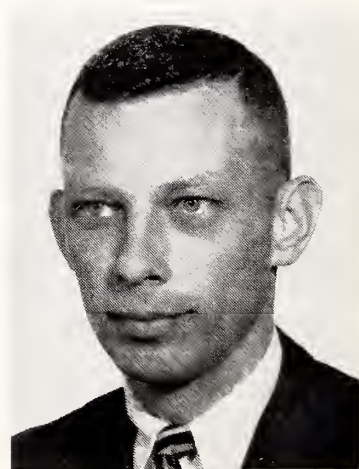
SCIENTIFIC SPEAKERS



DOUGLAS E. BUSBY, M.D.
Albuquerque, New Mexico

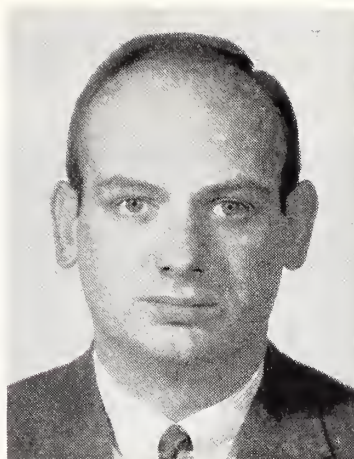
Dr. Busby was born in Toronto, Canada. He received his M.D. in 1960; M.Sc., 1964; internship and resident in general surgery, University of Western Ontario. Graduate training in cardiopulmonary physiology was divided between this university and the University of New York at Buffalo. He joined the Lovelace Foundation in 1964 and the Ohio State University Aviation Medicine Residency Program, in which the Foundation participates, in 1965. Most of his time with the Foundation has been spent in taking a prospective look at possible medical problems in space for the National Aeronautics and Space Administration (NASA).

Dr. Carpentier was born in Alberta, Canada. He received his M.D. from the University of British Columbia in 1961, his M.Sc. from Ohio State University in 1964; internship, resident in aviation medicine, and chief resident in preventive medicine at Ohio State University Hospital, 1961-1965. He received the Link Fellowship in 1964. In 1965 he became a resident in aerospace medicine, National Aeronautics and Space Administration Manned Spacecraft Center (NASA MSC), and medical officer, Medical Operations Office in 1966. He is now acting chief, NASA MSC Program Support Branch of the Medical Operations Office.



WILLIAM R. CARPENTIER, M.D.
Houston, Texas

Dr. Fischer was born in Brooklyn, New York. He received his M.D. from the University of Kansas School of Medicine in 1961, internship and resident in pathology, University of Kansas Medical Center, 1962-1964. Captain, U. S. Army, flight surgeon and research medical officer, NASA MSC, 1964-1966. During a year of this time he was a research fellow in the department of medicine (nuclear medicine) at Baylor University College of Medicine. He is now a member of the Space Physiology Branch of the Biomedical Research Office, NASA Manned Spacecraft Center.



CRAIG L. FISCHER, M.D.
Houston, Texas



JOSEPH P. KERWIN, M.D.
Houston, Texas

Dr. Kerwin, a lieutenant-commander in the U. S. Navy, was born at Oak Park, Illinois. He received his M.D. from Northwestern University Medical School in 1957; internship at the District of Columbia General Hospital, Washington, D. C. and U. S. Navy School of Aviation Medicine, Pensacola, Florida. Dr. Kerwin was selected as an astronaut by NASA in the scientist-astronaut group integrated into the program in 1965. In addition to participating in the astronaut training program, he has specific responsibilities for pressure suit development and extravehicular activity.

Dr. Roth was born in Boston, Massachusetts. He received his M.D. from Harvard Medical School in 1954; internship, Harvard Medical Service, Boston City Hospital. Captain, U. S. Air Force (MC), and research associate, Department of Space Medicine, School of Aviation Medicine, Randolph Air Force Base, Texas, 1956-57; Harold C. Ernst Research Fellow, department of bacteriology and immunology, and fellow of National Foundation, Harvard Medical School, 1957-1959; research associate, department of microbial physiology, and instructor in biology, Massachusetts Institute of Technology, 1960-1962. Dr. Roth is now Project Director, Department of Aerospace Medicine and Bioastronautics, Lovelace Foundation for Medical Education and Research.



EMANUEL M. ROTH, M.D.
Albuquerque, New Mexico

President and President-Elect



JAMES A. McCLURE, M.D.
President
Topeka, Kansas



GEORGE F. GSELL, M.D.
President-Elect
Wichita, Kansas

Visit the Exhibits!

Commercial Exhibits—Lower Lobby & Junior Ballroom

Scientific Exhibits—American Royal Room

Hours

Sunday, April 30—1:00 p.m.-4:30 p.m.

Monday, May 1—8:30 a.m.-4:30 p.m.

Tuesday, May 2—8:30 a.m.-4:30 p.m.

Wednesday, May 3—8:30 a.m.-12:00 noon

Time, money and effort have been spent in preparing these exhibits. Show your appreciation by visiting all of them.

Commercial Exhibits

The Commercial Exhibits will be located in the Lower Lobby and Junior Ballroom. Exhibits will be open on Sunday, 1:00 p.m. to 4:30 p.m.; Monday and Tuesday, 8:30 a.m. to 4:30 p.m.; Wednesday, 8:30 a.m. to noon.

ABBOTT LABORATORIES
North Chicago, Illinois

BRISTOL LABORATORIES
Syracuse, New York

CIBA PHARMACEUTICAL COMPANY
Summit, New Jersey

THE COCA-COLA COMPANY
Atlanta, Georgia

COMPTRONICS, INC.
Kansas City, Missouri

DUFFENS OPTICAL COMPANY
Topeka, Kansas

KANSAS BLUE SHIELD
Topeka, Kansas

THE MEDICAL PROTECTIVE COMPANY
Fort Wayne, Indiana

MERCK SHARP & DOHME
West Point, Pennsylvania

**MERRILL LYNCH, PIERCE, FENNER &
SMITH, INC.**
Kansas City, Missouri

**MID-WEST SURGICAL SUPPLY COMPANY,
INC.**
Wichita, Kansas

**MUNNS MEDICAL SUPPLY COMPANY,
INC.**
Topeka, Kansas

PARKE, DAVIS & COMPANY
Detroit, Michigan

THE PAYMASTER CORPORATION
Kansas City, Missouri

PFIZER LABORATORIES
New York, New York

WM. P. POYTHRESS & COMPANY, INC.
Richmond, Virginia

SANDOZ PHARMACEUTICALS
Hanover, New Jersey

G. D. SEARLE & COMPANY
Chicago, Illinois

SMITH KLINE & FRENCH LABORATORIES
Philadelphia, Pennsylvania

SMITH, MILLER & PATCH, INC.
New York, New York

E. R. SQUIBB & SONS
New York, New York

THE UPJOHN COMPANY
Kansas City, Missouri

**WASHINGTON NATIONAL INSURANCE
COMPANY**
Evanston, Illinois

The Kansas Medical Society is grateful for the convention program grants received from the companies listed below:

ELI LILLY & COMPANY
Indianapolis, Indiana

WYETH LABORATORIES
Kansas City, Missouri

Scientific Exhibits

The Scientific Exhibits will be located in the American Royal Room. Exhibits will be open on Sunday, 1:00 p.m. to 4:30 p.m.; Monday and Tuesday, 8:30 a.m. to 4:30 p.m.; Wednesday, 8:30 a.m. to noon.

A MODIFIED MASK ELBOW FOR INFANT RESUSCITATION AND ANESTHESIA

Robert F. Hustead, M.D., Elwyn S. Brown, M.D., and A. O. Tetglaff, M.D., Children's Mercy Hospital and Providence Hospital, Kansas City

SCIENTIFIC EXHIBIT

John J. Kepes, M.D., Department of Pathology, University of Kansas Medical Center, Kansas City

MANAGEMENT OF SPINAL BIFIDA

Thomas Sakoda, M.D., and Charles A. Clough, M.D., Neurosurgical Section, Department of Surgery, University of Kansas Medical Center, Kansas City

FAMILY TREATMENT OF TUBERCULOSIS

Kansas Tuberculosis and Health Association, Topeka

LIVER SCANNING IN THE DIFFERENTIAL DIAGNOSIS OF JAUNDICE

Edward J. Fitzgerald, M.D., Paul Murphy, M.D., and W. G. Cauble, M.D., Wichita

TUMORS OF CHILDHOOD

William S. Tihen, M.D., Department of Pathology, University of Kansas Medical Center, Kansas City

POSTGRADUATE MEDICAL EDUCATION

Jesse D. Rising, M.D., Department of Postgraduate Medical Education, University of Kansas Medical Center, Kansas City

OSTEOARTHRITIS OF HIP AND KNEE

John A. Lynd, M.D., Topeka Medical Center, Topeka

CARDIAC AND PULMONARY RESUSCITA- TION

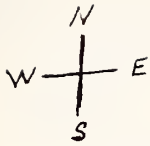
Ira R. Morrison, M.D., Medical Advisory Council, Kaw Valley Heart Association, Atchison

HUNTING DIABETICS BY FOOT

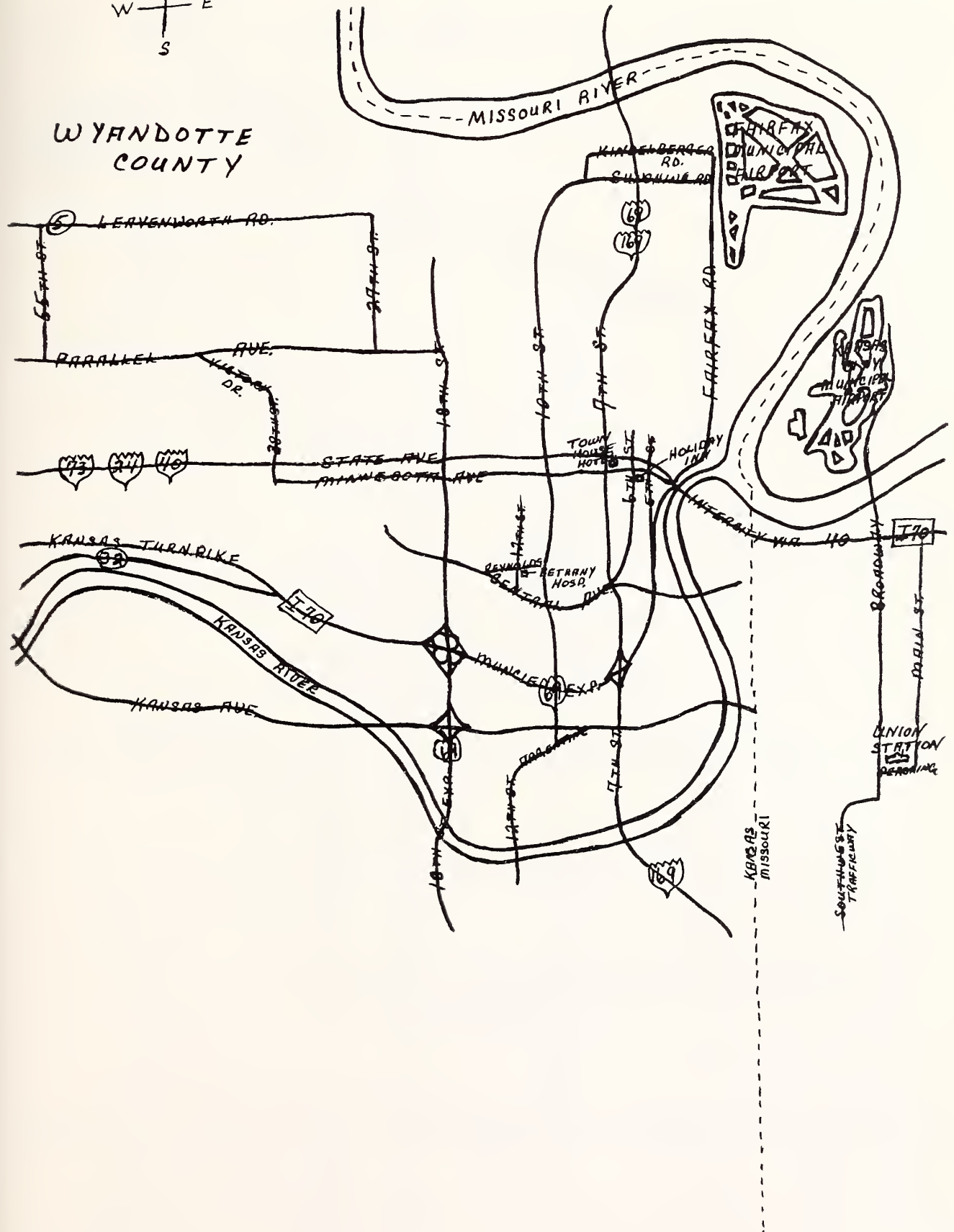
Irwin Waxman, D.S.C., Prairie Village; sponsored by Sherman Zarenski, M.D., Prairie Village

KAMPAC

Kansas Medical Political Action
Committee



WYANDOTTE COUNTY



Summaries of the Programs

April 30-May 3, 1967, Town House Motor Inn

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Hosts for the Meeting

Kansas City Physicians Arranging the 1967 Session

GENERAL CHAIRMAN—WILLIAM R. ALLEN, M.D.

PROGRAM COMMITTEE

Paul R. Carpenter, M.D., Chairman

ARRANGEMENTS COMMITTEE

Donald J. Smith, M.D., Chairman

COMMERCIAL EXHIBITS

Lawrence E. Leigh, M.D., Chairman

SCIENTIFIC EXHIBITS

Dan L. Berger, M.D., Chairman

SPECIAL EVENTS

Charles A. Crockett, M.D., Chairman

PUBLICITY COMMITTEE

Terry R. Denison, M.D., Chairman

AUXILIARY COMMITTEE

Ernest G. Neighbor, M.D., Chairman

MEDICAL ASSISTANTS COMMITTEE

Wray Enders, M.D., Chairman

Sunday Afternoon, April 30, 1967

Town House Motor Inn

PROGRAMS SCHEDULED ON DAYLIGHT SAVINGS TIME

1:00 REGISTRATION—INFORMATION
Lobby

HOUSE OF DELEGATES

Grand Ballroom

Thomas F. Taylor, M.D., Phillipsburg, Speaker
J. Walker Butin, M.D., Wichita, Vice Speaker

2:45 REGISTRATION OF DELEGATES

3:30 FIRST SESSION

8:30 PROGRAM ON CHIROPRACTIC
Grand Ballroom

*Joseph A. Sabatier, Jr., M.D.
Baton Rouge
President
Louisiana State Medical Society*

**THE WYANDOTTE-JOHNSON COUNTY HOSPITALITY ROOM,
SUITE 1401, WILL BE OPEN FROM 1:00 P.M.**

VISIT THE EXHIBITS!

**BOTH THE COMMERCIAL AND SCIENTIFIC EXHIBITS WILL BE OPEN
SUNDAY AFTERNOON**

Telephone Number 913 FInley 2-4363

Monday, May 1, 1967

Town House Motor Inn

7:30 REGISTRATION—TICKETS—INFORMATION
Lobby

8:00 REFERENCE COMMITTEE No. 1
Wyandotte Room

REFERENCE COMMITTEE No. 2
Fairfax Room

THE KAMPAC COFFEE BAR WILL BE OPEN FROM 8:00 A.M.
TO 12:00 NOON IN THE AMERICAN ROYAL ROOM

THE WYANDOTTE-JOHNSON COUNTY HOSPITALITY ROOM,
SUITE 1401, WILL BE OPEN FROM 12:00 NOON TO 5:00 P.M.

SPORTS DAY

KANSAS MEDICAL SOCIETY GOLF, SKEET, TRAP ASSOCIATION

Royal A. Barker, M.D., Council Grove, President
Charles A. Crockett, M.D., Kansas City, Chairman

- Golf—Milburn Country Club—7501 W. 69th St., Overland Park
- Fishing—Hwy. 69, Overland Park (South of King Louie West)
- Shooting—Winchester Gun Club—Hwy. 69; 18 miles South of Overland Park
- Bowling—King Louie West (afternoon only)—Hwy. 69, Overland Park

6:30 COCKTAIL HOUR—SPORTS BANQUET—Milburn Country Club

VISIT THE EXHIBITS!

Telephone Number 913 FInley 2-4363

Tuesday

Grand Ballroom

Town House

MORNING

7:30 PAST PRESIDENTS' BREAKFAST
Argentine Room

8:00 REGISTRATION—TICKETS—INFORMATION
Lobby

SPACE MEDICINE

SPONSORED AND PRESENTED BY THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
Craig Fischer, M.D., NASA, Houston, Texas, presiding

9:15 WELCOME

*William R. Brown, M.D., President
Johnson County Medical Society*

RESPONSE

*James A. McClure, M.D., President
Kansas Medical Society*

FIRST GENERAL SESSION

9:30 THE SPACE ENVIRONMENT
*Hamilton B. Webb, M.D., USAF
Washington, D. C.*

10:00 PHYSIOLOGICAL PROBLEMS IN THE SPACE
ENVIRONMENT

*E. M. Roth, M.D.
Lovelace Foundation
Albuquerque, New Mexico*

The environment imposed by space operations requires alteration of atmosphere, gravitational field, thermal conditions, radiation background, and many other factors in the ecosphere about man. Many of the engineering decisions in the design of the hardware and operational modes are determined by these physiological considerations. The man-machine-environment triangle will be discussed.

10:30 INTERMISSION TO VISIT COMMERCIAL AND
SCIENTIFIC EXHIBITS

THE KaMPAC COFFEE BAR, AMERICAN ROYAL ROOM, WILL BE OPEN ALL DAY

NOON

12:00 LUNCHEON—Grand Ballroom

Frank Mantz, M.D., Kansas City, presiding

GUEST SPEAKERS WILL BE PRESENT FOR QUESTION AND ANSWER PERIOD

THE WYANDOTTE-JOHNSON COUNTY HOSPITALITY ROOM,
SUITE 1401, WILL BE OPEN FROM 12:00 NOON TO 1:30 P.M.

VISIT THE EXHIBITS!

Telephone Number 913 FINley 2-4363

May 2, 1967

Motor Inn

Grand Ballroom

AFTERNOON

THIRD GENERAL SESSION

1:45 WELCOME

*Philip C. Nohe, M.D., President
Wyandotte County Medical Society*

2:00 MEDICAL OPERATIONAL SUPPORT OF
MANNED SPACEFLIGHT

*William R. Carpentier, M.D., NASA
Houston, Texas*

This presentation will outline the medical operation support of manned spaceflight. Included will be a brief description of pre-flight clinical examinations and baseline physiological evaluations; world wide tracking networks and inflight medical monitoring including monitoring during EVA; medical support for recovery operations and post flight medical evaluations.

2:30 MEDICAL OBSERVATIONS FROM PROJECT
GEMINI

*Craig Fischer, M.D., NASA
Houston, Texas*

Project Gemini provided medical scientists with a first opportunity for the study of man's response to protracted space flight. Emphasis has been placed on study of the cardiovascular, musculoskeletal, hematologic, and nervous systems, providing data necessary to "qualify" man for extended space travel. Changes in the postflight cardiovascular status of flight crews have been noted; however, these changes are manifest only during provocative testing. Intraflight bone demineralization has been suggested by densitometric analyses, of both weight bearing to nonweight bearing bones, subsequent to missions of 4, 8, and 14 days' duration. These changes have been variable and only in part related to mission duration. Hematologic changes, specifically a decrease in red cell mass, have been observed following two missions. Initial studies strongly suggest a hemolytic process associated with altered erythrocyte membranes as etiologic. Sleep evaluation and EEG data have been col-

lected, for a portion of one 14-day mission. The implications of these data will be discussed.

3:00 INTERMISSION TO VIEW COMMERCIAL AND
SCIENTIFIC EXHIBITS

FOURTH GENERAL SESSION

3:30 FUTURE MEDICAL PROBLEMS IN SPACE
MEDICINE

*Douglas Busby, M.D.
Lovelace Foundation
Albuquerque, New Mexico*

Many hazards are continuously or potentially facing astronauts during operations in space. Some hazards, such as the hard vacuum of space and solar flare radiation, are peculiar to the space environment. Others, such as heat and cold, are also characteristic of local Earth environments. Dr. Busby has taken a prospective look at medical problems arising from hazards of operations in space. His work has been oriented more toward prolonged missions during which any medical problems that arise might of necessity have to be managed in space rather than following return to Earth. After considering some of the general aspects of this area, including medical implications of cardiovascular deconditioning, he will discuss the various possible decompression effects on an astronaut, medical problems from thermal stresses, possible clinical consequences of weightlessness, traumatic injuries, acute radiation effects, carbon dioxide toxicity, and motion sickness. Since the risk of oxygen toxicity and chronic exposure to harmful trace atmospheric contamination should be virtually eliminated in advanced space systems, these clinical problem areas will receive only brief mention. Finally, consideration will be given to the general aspects of diagnosis and treatment of medical problems in space.

4:00 QUESTIONS AND ANSWERS

Telephone Number 913 FInley 2-4363

Tuesday, May 2, 1967

Grand Ballroom, Town House Motor Inn

EVENING

Annual Banquet—Kansas Medical Society

5:30 RECEPTION FOR PHYSICIANS AND WIVES—Pirates Room

Sponsored by the K.U. Medical Alumni Association

7:00 DINNER—Grand Ballroom

James A. McClure, M.D., Topeka, presiding

Invocation

Introduction of Guests

Oath of Office to Incoming President

K-State Singers

10:00 DANCING—Tony DiPardo and his Orchestra



Telephone Number 913 Finley 2-4363

THE K-STATE SINGERS



The K-State Singers, with new songs, new singers and a new director, will present a program of musical selections at the Annual Banquet on Tuesday evening, May 2.

Under the direction of Gerald Polich, newly appointed assistant professor of music, the Singers have traveled approximately 2,500 miles within Kansas and recently returned from an overseas tour.

The current members of the K-State Singers, including 13 from Kansas, are Lynn Collman, Haven; Jim Bush, Wichita; Gary Cave, Overland Park; Polly Coombs, Sedgwick; Carol Gaston, Wichita; Susan Goold, Prairie Village; Marilyn Hall, Medicine Lodge; Judy Hysom, Wichita; Steve Leete, Liberal; Ron Munson, Belleville; Judy North, Beloit; Dave Graham, Shawnee Mission; Carolyn Sanders, Hugoton; and Rob Roth, Lakewood, Colorado.

Under the sponsorship of the United Service Organizations (USO), the group toured military installations of the Northwest Command in March and April. They presented more than 50 concerts during their travels to Iceland, Greenland, Labrador and Newfoundland.

Their selections include a medley of tunes from the play, "Oliver"; "More," "All the Things You Are," "Dixie," "Everything's Coming Up Roses," "Let's Fall in Love," "Hello, Dolly," "Paddlin' Madelin' Home," and "Hava Nagila," an Israeli folk song.

DON'T MISS THE K-STATE SINGERS—ATTEND THE BANQUET

MAY 2, 7:00 P.M., IN THE GRAND BALLROOM

Hospital Seminars

MORNING

7:30 REGISTRATION—INFORMATION—Lobby, Town House Motor Inn

THE WYANDOTTE-JOHNSON COUNTY HOSPITALITY ROOM,
SUITE 1401, WILL BE OPEN ALL DAY

HOSPITAL SEMINARS

(Busses will leave from the Town House Motor Inn at 8:00 a.m. sharp)

University of Kansas Medical Center

(All three presentations will be given at 9:00 a.m., 10:00 a.m., and 11:00 a.m. Each section, limited to 12 physicians, will rotate through all three procedures; maximum enrollment for program 36 members)

8:30 INTRODUCTORY REMARKS—Battenfeld Auditorium

*Jack D. Walker, M.D.
Associate Dean, KUMC*

CARDIAC-PULMONARY FUNCTION EVALUATION UNIT

A demonstration of the scientific evaluation of patients with pulmonary disease and cardiac disease

*David Waxman, M.D., and
William Ruth, M.D.*

EMERGENCY RESUSCITATION PROCEDURES

A demonstration of techniques employed in resuscitation in cardiac and respiratory problems

*Ray T. Parmley, M.D., and
Marvin Dunn, M.D.*

GASTRIC COOLING—GASTRIC PHOTOGRAPHY—PERITONEOSCOPY—ESOPHAGEAL PRESSURE STUDIES

A demonstration of the current techniques for diagnosis and treatment in gastroenterology

*Arthur Klotz, M.D.,
James Rhodes, M.D., and
Dewey Dunn, M.D.*

Bethany Hospital

(Attendance limited to 40 members)

8:30 USE AND ABUSE OF CARDIAC DRUGS

Firmin Snodell, M.D.

9:00 ENZYME STUDIES IN ACUTE MYOCARDIAL INFARCTION

Bill Waddell, M.D.

9:30 QUESTIONS AND ANSWERS

9:45 COFFEE BREAK

10:00 AGGRESSIVE MANAGEMENT OF MYOCARDIAL INFARCTION

Hughes W. Day, M.D.

10:45 QUESTIONS AND ANSWERS

*Hughes W. Day, M.D., and
Raul Morffi, M.D.*

11:15 SMALL GROUP VISITATION TO HARTFORD CORONARY CARE UNIT

Shawnee Mission Hospital

(Attendance limited to 40 members, with eight to ten members in operating room at a time)

8:30 DEMONSTRATION OF OPERATIVE TECHNIQUE FOR ANTERIOR CERVICAL DISC EXCISION

*Ben Kozikowski, M.D., and
Richard Whitehead, M.D.*

9:30 DEMONSTRATION OF RECENT TRENDS IN DIAGNOSIS AND CONSERVATIVE TREATMENT OF CERVICAL SPINE INJURIES

Drs. Kozikowski and Whitehead

10:15 COFFEE BREAK

10:45 REVIEW OF SURGICAL TREATMENT OF REFRACTORY CASES WITH REVIEW OF OPERATIVE CASES

Drs. Kozikowski and Whitehead

Telephone Number 913 Finley 2-4363

May 3, 1967

Town House Motor Inn

AFTERNOON

The Specialty Societies will have meetings as scheduled on page 190 of the program.

2:00 HOUSE OF DELEGATES
American Royal Room

5:30 COUNCIL MEETING
State Suite

**THE WYANDOTTE-JOHNSON COUNTY HOSPITALITY ROOM,
SUITE 1401, WILL BE OPEN ALL DAY**



Specialty Society Meetings

Wednesday, May 3, 1967, Town House Motor Inn

**AMERICAN ACADEMY OF PEDIATRICS,
KANSAS CHAPTER**

Jayhawk Room

Roy Knappenberger, M.D., Wichita, President

12:00 LUNCHEON—PANEL DISCUSSION

THE FUTURE OF PEDIATRIC CARE IN KANSAS

PANELISTS:

*George Wolf, Jr., M.D., Dean
University of Kansas School
of Medicine*

*Herbert Miller, M.D., Chairman
Department of Pediatrics
University of Kansas School of
Medicine*

*Hugh Dierker, M.D., Director
Kansas State Department of
Health*

**AMERICAN COLLEGE OF CHEST
PHYSICIANS, KANSAS CHAPTER**

Sunflower Room

William Nice, M.D., Topeka, Vice President

12:00 LUNCHEON

EENT Section

Quindaro Room

Joseph A. Budetti, M.D., Wichita, President

10:00 BUSINESS MEETING—ELECTION OF OFFICERS

KANSAS SOCIETY OF ANESTHESIOLOGY

Argentine Room

M. Robert Knapp, M.D., Wichita, President

12:30 LUNCHEON—BUSINESS MEETING

KANSAS CORONERS ASSOCIATION

Wyandotte-Fairfax Room

Paul Adams, M.D., Osage City, President

12:00 LUNCHEON

SCIENTIFIC PROGRAM

*Angelo Lapi, M.D.
Kansas City, Missouri
John E. Johnson, M.D.
Kansas City, Kansas*

**KANSAS PHYSICIAN DIABETES
ASSOCIATION**

Argentine Room

Robert W. Brown, M.D., Kansas City,
President

**10:30 LECTURE BY AN OFFICER OF THE NATIONAL
DIABETES ASSOCIATION**

BUSINESS MEETING

KANSAS PSYCHIATRIC SOCIETY

State Suite

Thomas F. Morrow, M.D., Wichita, President

**12:00 LUNCHEON—KANSAS PSYCHIATRIC SOCIETY
COUNCIL**

**1:30 BUSINESS MEETING AND SCIENTIFIC PRO-
GRAM**

Telephone Number 913 Finley 2-4363

Woman's Auxiliary to the Kansas Medical Society

May 1-3, 1967, Town House Motor Inn

PROGRAMS SCHEDULED ON DAYLIGHT SAVINGS TIME

Monday, May 1

- 8:30 REGISTRATION—HOSPITALITY ROOM—
State Suite, 2nd Floor
- 10:00 PAST PRESIDENT'S BRUNCH—
Terrace Club, 8th & State Streets
- 12:30 LUNCHEON (for all members)—
Grand Ballroom
- 2:00 PRE-CONVENTION BOARD MEETING—
State Suite
- 6:30 SOCIAL HOUR—Top of the Tower Banquet
Room, Commerce Towers, 9th &
Main, Kansas City, Missouri
- 7:30 DINNER HONORING STATE OFFICERS—Top
of the Tower Banquet Room
*Mrs. Ronald W. Stitt, President
Wyandotte County Auxiliary and
Mrs. Dan L. Berger, President
Johnson County Auxiliary, presiding*
Popular Show Music presented by Joanne
and Ronald Highley, Lyric Opera
Singers

Tuesday, May 2

- 8:00 REGISTRATION—State Suite
CONTINENTAL BREAKFAST (complimen-
tary)—Pirates Inn
- 9:00 GENERAL SESSION—Wyandotte-Fairfax
Room
- 1:00 LUNCHEON HONORING NATIONAL OFFICER
—Milburn Country Club
*Mrs. C. C. Long, First Vice President,
Woman's Auxiliary to AMA, guest
speaker*
*Mrs. Lyle Glenn
State President, presiding*
- 5:30 RECEPTION—K.U. Medical Alumni Asso-
ciation—Pirates Inn
- 7:00 KANSAS MEDICAL SOCIETY BANQUET—
Grand Ballroom

Wednesday, May 3

- 9:00 POST CONVENTION BOARD MEETING—
State Suite
GOLF

Telephone Number 913 Finley 2-4363

Kansas Medical Assistants Society

27th Annual Meeting
April 28-30, 1967, Town House Hotel

Friday Evening, April 28

PAST PRESIDENTS' MEETING—President's Suite

Jenevieve Carter, Salina, Chairman

8:00 REGISTRATION—Lobby

HOSPITALITY PARTY—Junior Ballroom

Courtesy Munns Medical Supply Company

Saturday, April 29

8:00 EXECUTIVE MEETING—Argentine Room

REGISTRATION—Lobby

COFFEE—Wyandotte-Fairfax Room

10:00 CALL TO ORDER AND INVOCATION—American Royal Room

*Eula Hartner, Topeka, President
Kansas Medical Assistants Society*

CREED

*Dorothy Gunn, Great Bend
President-Elect*

Kansas Medical Assistants Society

10:15 WELCOME

*Philip C. Nohe, M.D., President
Wyandotte County Medical Society*

10:25 RESPONSE

*James A. McClure, M.D., President
Kansas Medical Society*

10:35 BUSINESS SESSION

12:00 PRESIDENT'S LUNCHEON—Quindaro Room

1:30 BUSINESS SESSION RECONVENES—American Royal Room

2:00 ARE YOU COMMUNICATING?

*Marge Slaymaker, Newton
Immediate Past President
American Association of
Medical Assistants*

3:00 HEAD INJURIES—20TH CENTURY EPIDEMIC

*Charles E. Brackett, M.D.
University of Kansas Medical Center*

3:30 KNOW THYSELF

*Mrs. Joy Barnett, Kansas City
Graphoanalyst*

7:00 BANQUET—Grand Ballroom

INVOCATION

*John E. Sweeney, M.D., Topeka
Chairman, KMAS Advisory Board*

GREETINGS

*Fred N. Bosilevac, M.D., Kansas City
Advisory Board, Wyandotte County
Medical Assistants Society*

RESPONSE AND INTRODUCTIONS

Eula Hartner, President

INSTALLATION OF OFFICERS

*Marge Slaymaker, Newton
Installing Officer*

MOONLIGHT ON THE MEDITERRANEAN

*Narrated by Vera Wooton, Kansas City
Convention Chairman*

HILLTOP STUDIO DANCERS

Directed by Mrs. Nelda Hill

KOLA CLUB FOLK DANCERS

Directed by Mr. Don Lipovac

Sunday, April 30

8:00 REGISTRATION—Lobby

COFFEE—Wyandotte-Fairfax Room

Johnson County Medical Assistants Society

9:00 CALL TO ORDER AND ANNOUNCEMENTS—Grand Ballroom

9:15 GREETINGS

*Carol Skradski, Kansas City, President
Wyandotte County Medical Assistants Society*

9:30 HEMATOLOGY REPORTS

*Marjorie Sirridge, M.D., Kansas City
Hematologist*

10:00 RADIOLOGY AND THE MEDICAL ASSISTANT

*William R. Allen, M.D., Kansas City
Radiologist*

10:30 HUMAN RELATIONS AT WORK

*Joseph H. Mallon, Kansas City
Area Manager, Dale Carnegie Courses*

12:00 CONVENTION LUNCHEON—Grand Ballroom

INVOCATION

O. W. Davidson, M.D., Kansas City

STYLE REVIEW

*Courtesy Hennessey Dress Shop
Town House Hotel*

SING, SING, SING

Don and Valdeen Wooton, Kansas City

Kansas Society of Medical Technologists

Kansas Society of Pathologists

May 4, 5, 1967, Glenwood Manor Motel, Overland Park

Thursday, May 4

- 8:00 REGISTRATION
- 9:00 OPENING OF CONVENTION
- INVOCATION
- Rev. Robert Seals*
Westwood Christian Church,
Shawnee Mission
- GREETINGS
- Frank Mantz, M.D.*
President of KSP, Kansas City
Sister M. Carmel Heffern, M.T. (ASCP)
President of KSMT, Fredonia
- 9:15 THE MEDICAL TECHNOLOGIST IN THE REGIONAL HEALTH PROGRAM
- Jack Walker, M.D.*
University of Kansas Medical Center
- 9:45 THE RADIOSOTOPE LABORATORY IN A SMALL COMMUNITY HOSPITAL
- Charles Hinshaw, M.D.*
Hutchinson Clinical Laboratory,
Hutchinson
- 10:15 COFFEE AND VIEW EXHIBITS
- 10:45 IMMUNOELECTROPHORESIS IN TODAY'S HOSPITAL LABORATORY
- Mrs. Megan Rucker, M.T. (CSMT)*
University of Kansas Medical Center
- 11:10 EVALUATION OF THE ANTINUCLEAR FACTORS
- Charles Kirkpatrick, M.D.*
University of Kansas Medical Center
- 11:30 SPECIMEN TIME
- James Ruggles, M.D.*
Hertzler Clinic, Halstead
- 12:30 LUNCHEON
- Medical Technology Students' Seminar
- 2:00 BUSINESS MEETING
- 3:00 COFFEE AND VIEW EXHIBITS
- 3:20 KSMT BUSINESS MEETING
- 6:30 SOCIAL HOUR—BANQUET

Friday, May 5

- 8:00 REGISTRATION
- 9:00 MALAYSIAN MEDICINE
- Fred Holmes, M.D.*
VA Hospital, Kansas City, Missouri
- 9:30 LABORATORY MANAGEMENT OF THE RH IMMUNIZED O.B. PATIENT
- William Cameron, M.D.*
University of Kansas Medical Center
- 10:00 THE DIAGNOSIS OF HYPERPARATHYROIDISM AND METABOLIC BONE DISEASE
- Barbara Lukert, M.D.*
Providence Hospital and University of Kansas Medical Center
- 10:30 COFFEE AND VIEW EXHIBITS
- 11:00 INTERESTING LEUKOCYTE ANOMALIES
- David Jenkins, M.D.*
University of Kansas Medical Center
- 11:30 TUBES TO TRIALS
- Miss Betty J. Anderson, M.T. (ASCP),*
LL.B., Legal Department, American Medical Association, Chicago
- 12:00 LUNCH
- 1:00 CLINICAL AND LABORATORY ASPECTS OF MYCOBACTERIA
- L. A. Hollinger, M.D.*
Baptist Memorial Hospital,
Kansas City, Missouri
- 1:30 INJURY CONTROL IN CLINICAL LABORATORIES
- William Holland, Public Health Service, Arlington, Virginia*
- 2:15 HOW TO HANDLE PROBLEM PHYSICIANS
- Philip Van Thullenar, M.D.*
St. Margaret's Hospital,
Kansas City, Kansas
- 2:45 SELF LABORATORY IMPROVEMENT
- Russell J. Eilers, M.D.*
University of Kansas Medical Center
- 3:30 ADJOURNMENT

Parliamentary Procedure

A Guide to Govern Deliberations in the House of Delegates of the Kansas Medical Society

MANY OF THE DELEGATES from the component societies of the Kansas Medical Society are unprepared for engaging in the deliberations of the House of Delegates. We are all not expert parliamentarians, nor have we specialized in parliamentary procedure. Usually we are not interested in participating in the business affairs of an organization. It is with this thought in mind that the following Rules of Order are written. I hope that it will be a help and will govern deliberations of the House of Delegates and its committees. This article will be divided into three sections: (1) Rules of order for the meetings of the House of Delegates; (2) A guide for conduct of Reference Committees, and the correct forms of introducing resolutions, and (3) Your parliamentary rights and how to exercise them.

RULES OF ORDER

I. Purpose

Section 1.01. These Rules of Order are set forth to govern the deliberations of the House of Delegates and its committees.

II. Meetings of the House of Delegates

Section 2.01. The House of Delegates shall meet as required in the By-Laws of this organization, provided, however, that there shall be at least a minimum of two meetings at each session separated by at least 24 hours.

III. Subsidiary Committees

Section 3.01. Credentials Committee

Section 3.011. The Credentials Committee shall examine the credentials of all who seek admission to the House of Delegates, and rule on the seating of all members and proposed substitution of others for absentees. All those whose credentials are found to be in order shall be registered and seated as official members of the House of Delegates. Any member of the Society registered for the Annual Meeting may be admitted to the visitors' section, within limits of space.

Section 3.012. An appeal from any ruling of the Credentials Committee may be entered by the individual whose credentials are in question or by any voting member in his behalf. Such appeal must be entered immediately following the report

of the Credentials Committee to the House that a quorum exists and a majority vote by the House of Delegates will decide the issue.

Section 3.013. The Credentials Committee shall designate one of its members to act as Sergeant-at-Arms to act under the direction of the President to insure that all members are properly seated and to carry out the will of the House in the preservation of order.

Section 3.014. The Credentials Committee shall report to the House when requested by the President, on the following:

- (a) Total number of members of the House eligible to vote at this session.
- (b) Number of such members registered and officially seated.
- (c) Announcement of quorum.
- (d) Announcement of Sergeant-at-Arms.

Section 3.02. Reference Committees.

Section 3.021. The following Reference Committees shall be constituted for each session of the House of Delegates for the purpose of considering those items which are referred to them:

- (a) Reference Committee Number 1 for those resolutions bearing even numbers.
- (b) Reference Committee Number 2 for those resolutions bearing odd numbers.

Section 3.022. Within six days after receipt of a list of items of business to be considered at the next session of the House of Delegates, the President shall recommend through the Executive Office that such additional Reference Committees shall be constituted as, in the judgment of the President, appear to be necessary for the most effective handling of the business to be introduced.

Section 3.023. The President shall appoint the personnel of each Reference Committee as will insure that such committees will be fully constituted at least ten days prior to the first meeting of the House of Delegates.

Section 3.024. No Reference Committee shall consist of less than five nor more than seven members, each of whom shall have been members in good standing of the Kansas Medical Society for at least five years, except that the President may designate technical or consultatory assistants in

excess of that number. Such assistants need not be members of this Society and shall act solely in an advisory capacity and be without vote.

Section 3.025. The duties of the Reference Committees shall be:

(a) To hold open hearings on all items of business which have been referred to it, at such time and place as shall have been announced at the first meeting of the House of Delegates.

(b) To deliberate in closed session on each item of business which has been referred to it, and after full consideration to make a recommendation as to its final disposition in the House.

(c) To prepare a written report for the second meeting of the House of Delegates presenting its recommendations on each item of business which has been referred to it.

Section 3.026. In its hearings, deliberations and recommendations each Reference Committee shall be guided by and shall adhere to the provisions set forth in "Guide for Conduct of Reference Committees."

IV. Order of Business

Section 4.01. First meeting of the House of Delegates.

Section 4.011. At the first meeting of the House of Delegates, all items of business which have been published in the official publication of this Society shall be introduced by title, and referred without debate or action to an appropriate Reference Committee, except as otherwise stipulated in these Rules of Order.

Section 4.012. All other items of business which have not been previously published and distributed to the members of the House shall be read in full, unless in the opinion of the President, concurred in by the House, it is considered desirable to introduce it in an abbreviated form.

Section 4.013. Proposed amendments to any reports or any other items of business which have been introduced may be entered immediately following the introduction of the item to which it refers or under "New Business." Such proposal shall be in writing, and shall not be debated nor acted upon at the first meeting, but shall adhere to the item of business to which it pertains.

Section 4.014. The Order of Business at the First House of Delegates shall be: (unless otherwise ordered by a two-thirds vote of the delegates present)

1. Registration of delegates, ex-officio members and visitors.

2. Call to order by the President.

3. Announcement of the number of delegates, ex-officio members present and registered, and the presence of an official quorum.

4. Nominations from the floor for each elective office and a ballot vote where three or more candidates have been nominated for one office.

5. Reading of the minutes of the last or any special meeting.

6. Report of Reference Committee on reports printed in the JOURNAL with details of recommendations and resolutions therein requiring action by the Society.

7. Supplemental reports from committees or officers.

8. Report of the Executive Secretary.

9. Report of the Treasurer.

10. Unfinished business.

11. New business and resolutions offered.

12. Address of the President (if desired).

13. Address of the President-Elect (if desired).

14. Announcements—to include time and place of Reference Committee meeting, names and districts of expiring councilors' terms and to include naming of the two candidates nominated for each contested elective office.

15. Adjournment to reconvene at the second meeting.

Section 4.02. Second meeting of the House of Delegates.

Section 4.021. At the second meeting of the House of Delegates, the House will receive the full report of each Reference Committee on all items of business which were referred to it at the first meeting of the House.

Section 4.022. Each item of business so reported upon shall be subject to full debate, amendment, and any action which the House desires to take upon it, except that any item which has previously been accepted for a first reading may not be amended to any degree that materially alters the original intent of the item.

Section 4.023. No item of business may be considered at the second meeting of the House unless it was introduced at the first meeting and referred to a Reference Committee except as provided for in the By-Laws.

Section 4.024. If a Reference Committee fails to submit a report at the second meeting of the House upon any item which was referred to it at the first meeting, such item may be placed before the House by the President, and must be so placed upon request of any member of the House.

Section 4.025. The order of business at the second meeting of the House of Delegates shall be:

1. Registration and seating of delegates, ex-officio members and visitors.

2. Call to order by the President.

3. Election of officers (by ballot): President-Elect, First Vice President, Second Vice President, Constitutional Secretary, Treasurer, Delegate-Elect and Alternate to the American Medical Association.

4. Report of secondary meeting of Reference Committees.
5. Unfinished business.
6. New business.
7. Election of Councilors for expired terms by caucus of delegates present from the respective districts.
8. Announcements of Councilors elected and meeting place of the Council.
9. Installation of the new President.
10. Adjournment.

V. Motions

Only members of the House of Delegates are privileged to make any motions, except that a duly appointed chairman of any Reference Committee or of any Standing or Special Committee of the Kansas Medical Society may make motions pertaining to any matter which has been referred to or considered by his committee, whether he be a member of the House or not, and further, except that any member of a Reference Committee, other than advisory members, may make motions incident to the introduction of and debate on minority reports.

Section 5.02. All resolutions shall be submitted in writing.

Section 5.03. The President may, at his discretion, direct that complicated motions or amendments be submitted in writing.

Section 5.04. A motion to take any tabled motion from the table is in order either during the same session at which it was tabled or during the next session, even if the sessions are held no oftener than annually. In this reference the term "session" shall be understood to include the total number of meetings which are held between the initial convening of the House of Delegates and its final adjournment.

VI. Debate

Section 6.01. Discussion and debate on any matter before the House shall be carried on according to standard parliamentary procedure as outlined in the official parliamentary authority of this Society.

Section 6.011. Any voting or non-voting member of the House of Delegates has the right to discussion of any matter before the House.

Section 6.012. Any duly appointed member of a Reference Committee shall be accorded the privilege of discussing any matter which was considered and is being reported by his committee. This same privilege of discussion and debate shall be extended to the chairman of any duly appointed Standing or Special Committee of the Kansas Medical Society on those items which have been under discussion by his committee.

Section 6.013. Any consultative advisor or technical assistant shall be accorded the privilege of discussing any matter before the House, if invited by the President, or if such request is made by any member, provided, however, that this privilege may be denied such individual by a motion duly entered and passed by a majority of the voting members of the House.

Section 6.02. The President shall be granted the floor without regard to the customary limitations of debate, insofar as this can be done without depriving any other member of his parliamentary rights, and further provided that the President shall be bound by the usual rules of parliamentary decorum, and he shall be subjected to any rules to limit debate which are in effect at that time.

VII. Voting

Section 7.01. Voting shall be carried on according to standard parliamentary procedure as outlined in the official parliamentary authority of this Society.

Section 7.011. The method of voting shall be at the option of the President, except when the method is stipulated in the By-Laws of this Society or the House adopts a motion to vote in a specific way. The President shall state the method of voting when the question is put to vote.

Section 7.012. If the President is in doubt as to the outcome of the vote, he shall call for a retake by some method which will indicate the exact number voting on each side. Likewise, and under the same circumstances, any voting member of the House may request that a retake vote be made.

Section 7.013. A vote offered by proxy or by mail shall not be considered valid except when so stipulated in the By-Laws.

Section 7.014. The Secretary may be instructed by the House to cast a single ballot on either side of the question, but a motion to "cast a unanimous ballot" shall not be in order.

Section 7.02. If any election to an office results in a tie vote, the winner shall be determined by drawing lots.

VIII. Appeals, Challenges and Claims of Illegality

Section 8.01. An appeal, challenge or claim of illegality may be entered only by voting members of the House, except that an appeal from a decision of the Credentials Committee may be entered by the individual whose credentials are in question.

Section 8.011. Appeals from a decision of the chair must be raised immediately after the decision

is rendered and before other business has intervened.

Section 8.013. All other appeals, challenges or claims of illegality must be raised at the same session at which the action under question occurred.

IX. Unanimous Consent

Section 9.01. The House may, by unanimous consent, grant any motion, action, or request which is not in violation of any provision in the By-Laws of the Kansas Medical Society even if such action is adjudged to be out of order according to the official parliamentary authority of this Society, or these Rules of Order.

X. Amendment and Suspension

Section 10.01. These Rules of Order may be amended, or any provision thereof temporarily suspended by a two-thirds majority vote of the House of Delegates at any legal meeting of the House.

Section 10.02. No provision of the Rules of Order shall be effective and no amendment to nor suspension of the provisions thereof shall be permitted if such provision or action is in violation of the By-Laws of the Kansas Medical Society, or the laws of the State of Kansas.

XI. Parliamentary Authority

Section 11.01. The latest edition of *Robert's Rules of Order* shall govern all matters not covered by the Rules of Order or the By-Laws of this Society.

Section 11.02. Those situations not so covered shall be decided by the Parliamentarian of the House of Delegates, with the consent of the House of Delegates.

A GUIDE FOR CONDUCT OF REFERENCE COMMITTEES

Each item of business properly introduced into the House of Delegates must be considered by the House of Delegates for their determination. Proper procedure requires that all items be adequately studied and discussed. However, the agenda is increasing. Therefore, it becomes impractical to debate fully on the floor of the House of Delegates each item submitted. In addition, only members of the House of Delegates have voice in the assembly. This may have an effect of depriving members of the Society (not members of the House of Delegates) an opportunity to be heard.

For these reasons, the Reference Committee system has been established and has been adopted. Con-

siderable responsibility and authority is delegated by the House of Delegates to the Reference Committees. All matters introduced into the first meeting of the House of Delegates are referred by the President without debate to a Reference Committee for their consideration. All items which are related by factual content, policy, or procedure are given to one committee if this is at all possible. Upon the committee members rests the responsibility to thoroughly familiarize themselves with the items appearing on their agenda by seeking all available factual information, by seeking opinion of the membership and, if necessary, by seeking expert advice.

During the first meeting of the House of Delegates, the President refers to Reference Committees each item of business introduced during this meeting. No debate upon the merits is permitted at this time. Instead, all members of the Kansas Medical Society, including those sitting in the House of Delegates, are encouraged to direct their comments, facts, and arguments to the Reference Committee handling this particular item of business. The Reference Committee is the sounding-board of the Society and of the House of Delegates. The committee is composed of members who represent the various geographic areas, who are generally familiar with the business at hand, and who will be objective in their approach to the issues. The House of Delegates imposes upon them the duty and the responsibility to act in their stead and to hear all testimony, to develop all facets of the problem, and to render their considered opinion on all matters of business so referred. In the past, Reference Committees have functioned very well indeed. As a result, reports of the Reference Committees frequently have been adopted as the action of the House of Delegates.

Orientation Session

At the published time, following the first meeting of the House of Delegates, the orientation session of the Reference Committees will be held under the chairmanship of the Parliamentarian of the House of Delegates. This orientation meeting is conducted for the benefit of the Reference Committee members. The Parliamentarian will outline Reference Committee procedure, duties and conduct. The Executive Secretary will distribute a copy of all the pertinent files of the subject matter under discussion. A general question and answer period will follow.

Closed Session

Following the orientation meeting, the Reference Committees shall meet in closed session in prearranged hearing rooms. At this time the chairman shall review with his committee all items on the agenda to familiarize the committee with the agenda to deter-

mine what facets of the problem remain undeveloped; to determine effects of the anticipated action upon the Society. Only members of the committee shall be permitted to attend this closed session. However, the Parliamentarian shall be available to determine any procedural questions. Should other technical assistance be needed, the Executive Secretary will arrange such counsel.

Open Hearings

The Reference Committee must hear all members of the Society who wish to appear before the committee on any matter of business on the committee agenda. However, it remains the prerogative of the chairman of the committee to set time schedules of hearings. All members seeking an opportunity to be heard must abide by such posted schedule of hearing. Having been notified by such posted schedule, it becomes the obligation of the member to make himself available to testify before the committee at the proper time. However, subject to the discretion of the chairman, testimony can be heard out of order. Thus, the democratic system is preserved and a planned committee schedule maintained.

The committee may seek or hear testimony of non-members, if, in the discretion of the chairman, such information is pertinent and necessary for the committee members to reach an informed opinion concerning a question before it. However, certain limitations should be exercised by the chairman in this regard. Should exhaustive and detailed investigation be required to secure necessary facts, it may be presumed by the Reference Committee that more information should have been submitted with the resolution. In such case, the item may well be reported to the House of Delegates with a *Motion to Defer*.

During the open hearings of the Reference Committees, parliamentary rules should be adhered to only to the extent necessary to maintain order and insure a hearing for everyone who wishes to be heard. However, the chairman must maintain control over the conduct of the proceedings. The testimony and discussion should be germane to the facts at issue but considerable latitude may be tolerated at times. Members of the committee should be encouraged to participate in the discussion. They must remain at all times as objective as possible and pose questions in language to elicit witness opinion and/or additional pertinent facts. However, committee members must not enter into debate with other committee members or Society members appearing before it. Hearings are for benefit of the Reference Committee and not for the purpose of influencing those who testify before it. While strict parliamentary procedure should be discouraged, it is incumbent upon the chairman to main-

tain decorum during proceedings and encourage full discussion of the business at hand.

Executive Session

After all witnesses have been heard, the Reference Committee will enter executive session. At this time, members of Reference Committees consider and weigh all the testimony of the open hearing. Finally, the Reference Committee, through its chairman, reports back to the House of Delegates findings on all questions referred to the Reference Committee for consideration with specific recommendation. When this report is read to the House of Delegates by the chairman of the Reference Committee, the chairman will, upon his own motion, move the adoption of the report. It will be presumed that the committee seconds the chairman's motion.

YOUR PARLIAMENTARY RIGHTS AND HOW TO EXERCISE THEM

The following is presented with the sincere hope that it will enable each member of the House of Delegates to fully understand the proceedings of a parliamentary body and thus feel more at home participating in its deliberations. The member who understands these mechanical processes is in a good position to influence legislation to his liking.

General Consideration

An informed delegate with a minimum working knowledge of parliamentary procedure has it within his power to introduce new items and to pass, amend, defeat, table, postpone, and recommit any item before the House if he knows what motions to make and when to make them and can muster enough support to provide the necessary majority when the vote is taken. Under certain circumstances he may bring about reconsideration or even revision of legislation which has already been legally adopted. Control of the House lies in three areas, the MOTION, the DEBATE, and the VOTE.

The Motions

A. The Main Motion—through which all business is introduced in the House.

1. Only one may be under consideration at any given time.
2. Any member may make the second.
3. Subject to motions to amend, table, postpone to a certain time or indefinitely, to refer to committee, and yields, to all except another main motion.

Form: "I move that. . . ."

B. To Amend—by which main motions are altered to better suit the desires of the House.

1. Any number may be proposed except that no more than two may be under consideration at any one time.

2. The second amendment may apply either to the first amendment or independently to the main motion.

3. Amendments may be proposed to add, strike out and insert, substitute or divide.

4. An amendment cannot be tabled, postponed or referred separately from the main motion to which it applies.

5. Long or complicated amendments should be proposed in writing.

Form: "I move that we amend the motion by. . ."

C. To Table—by which consideration of a motion is delayed.

1. Never qualify a motion to table. It cannot be tabled "until some other event has occurred" or "until next meeting." Qualifying phrases strip this motion of its rank or precedence.

2. Takes precedence over all subsidiary motions.

3. Cannot be debated or amended but must be voted upon as soon as put.

4. If defeated it may be renewed only after additional discussion has changed the situation which existed when it was defeated.

5. If the motion is passed, the item to which it applies is automatically removed from further consideration together with all the motions which apply to the item tabled.

6. A tabled motion remains tabled until a motion to "take from the table" is passed by the House. Such motion is in order any time in the "same" session (only after business has intervened) or at any time in the "next" session (next year).

7. A motion may be delayed but kept alive indefinitely by voting to table year after year but will automatically die unless such motion to table is renewed at each subsequent session.

Form: "I move that this (motion, resolution, etc.) be tabled."

D. To Postpone—by which further consideration of an item is postponed to a specific time, or indefinitely (depending upon the wording of the motion). All motions to postpone are debatable.

1. To postpone to a "certain specified time:"

- a. To a later time at the same session. (It is then a special order of business.)

- b. To the next regular session (automatically taken up under "unfinished business").

- c. To a meeting to be held before the next regular meeting.

- d. Cannot be "postponed to a definite time" beyond the next regular session.

- e. But can be postponed an indefinite number of times and thus be kept alive.

Form: "I move that consideration of this motion be postponed until. . ."

2. To postpone indefinitely:

- a. If passed the effect will be to kill the item for that session, and it stays dead unless reintroduced at a subsequent session.

- b. Any item of business which is killed in one session (or dies automatically) may be reintroduced at a subsequent session because one House cannot irrevocably bind a subsequent House to any course of action.

- c. A motion which is postponed indefinitely cannot be further considered at the same session unless the House votes to consider the "motion to postpone indefinitely."

- d. A motion to postpone indefinitely automatically opens up the main motion to debate. The motion to postpone and the merits of the main motion can then be debated concurrently.

Form: "I move that consideration of the motion be postponed indefinitely. . ."

E. To Refer a Recommit—by which items are referred to a committee for further study and subsequent report before being considered further.

1. If no standing committee exists, motion should be clear as to:

- a. Size and constitution of committee.

- b. Who appoints the committee (President or House).

- c. What authority the committee has.

- d. When it shall report.

2. If a standing committee does exist, the House may still refer the item to another committee if by a two-thirds vote they remove this item from the jurisdiction of the standing committee.

3. The membership of such committees must be named before adjournment unless by unanimous consent the House grants the privilege of deferring such appointments to a subsequent time.

Form: "I move that this motion be referred to the committee (or a new committee) of _____ to be appointed by the President (or by the House by nominations from the floor) for further study and report at the next meeting (or with authority to act in the interim.)"

F. To Reconsider—by which motions previously adopted may be reconsidered.

1. Must be moved by the one who voted on the prevailing side (if the vote was by ballot, his right to move reconsideration may be challenged in which case it will be decided by the House).

2. Any member may second the motion.

3. Any main motion which has been previously adopted or defeated may be reconsidered unless in the meantime the action has been carried out.

4. A motion to reconsider may be proposed only "on the same day" or the "very next day." (Thereafter the motion is "to rescind.") It can be proposed immediately after the results of the vote on the original main motion is announced or at a later time within the above limits.

5. It cannot apply to motions to adjourn, suspend the rules or to table.

6. No question can be twice reconsidered.

Form: "I move that we rescind the motion that. . ."

G. Withdrawing a Motion

1. A motion or its second may be withdrawn by its maker at any time before it is stated by the Chair.

2. It may also be withdrawn after being stated by the Chair up to the time a vote is taken, PROVIDED no one objects to its withdrawal.

3. In case there is an objection, the privilege of withdrawal is decided by a vote of the House.

Form: "I wish to withdraw the motion just made."

The Rules of Debate

1. Time limit for each speech is ten minutes, except that:

a. Any member may talk more than ten minutes if no one objects, unless the House has voted (two-thirds) to limit debate.

b. The House by two-thirds vote may overrule an objection and extend the time to any member.

2. Each member has the right to speak once on each issue unless the House has voted (two-thirds) to limit debate.

3. Each member is entitled to speak a second time on the same issue unless some other member actually rises to claim the floor in which case he must yield to one who has spoken less times than he has.

4. A member may speak more than twice on any subject unless objection is raised.

5. One who makes a motion can vote against it but he cannot speak against it.

6. Discussion and debate are not in order at

the first meeting of the House. Amendments and other motions affecting legislation introduced at that session will be in order at the second session.

7. The rules of debate may be altered by adoption (two-thirds vote) of any of the following appropriate motions:

a. "I move that each of the members be limited to (or granted) _____ minutes debate on the motion before the House."

b. "I move that the House limit the number who can speak on the motion before the House to _____ for and an equal number against."

c. "I move that debate be automatically closed at _____ o'clock and that each member be granted _____ minutes."

d. If it is desirable to cut off further debate and force an immediate vote on any motion make the following motion:

"I move the previous question." This has the effect of stopping all debate instantly until a vote is taken on the motion for "previous question." If this motion is adopted, an immediate vote must be taken on the motion under discussion. If lost, the debate may resume where it left off.

NOTE: Any of the above motions may be made at any time during debate provided it does not interrupt a speaker.

Only the motion "to table" takes precedence over them.

The Rules of Voting

1. If the question under vote is not clear you should request, "Will the Chair please restate the motion?"

2. The following are common acceptable methods of voting:

a. By voice—Inaccurate for close votes.

b. By hand—More accurate to count and should be used for close votes.

c. By rising—More accurate to count and should be used for close votes.

d. By secret ballot—Must be used wherever called for in By-Laws and should be used whenever disclosing one's vote would cause pain or embarrassment.

3. Any member who is uncertain of the accuracy of a voice vote should call out without rising, "I doubt the vote." This should be done immediately after the Chair has announced the results (not before). The Chair will then take the vote again by hand or by rising.

4. In case of a tie, the motion is lost except on a vote to sustain the decision of the Chair (on an Appeal). A tie vote sustains the decision.

5. The House, by majority vote, or silent consent, may direct that a vote be taken by secret bal-

lot or by roll call. Such a motion may be entered by any member.

6. Anyone may change his vote up to the time the Chair announces the final result by rising and stating his desire to change his vote.

Miscellaneous Information

1. At the first meeting of the House, all business is introduced and referred without debate or action to an appropriate committee.

2. At the second meeting the Reference Committees present their reports and all items are subject to debate and final action. New business may be introduced only with the consent of two-thirds of the House by vote.

3. The House may vote to suspend the rules by a two-thirds vote, except that By-Laws cannot be suspended even by unanimous consent.

4. Any member may rise to a point of order by which he questions the legality of any procedure or challenges the ruling of the Chair. The Chair may rule on the point of order or submit it to vote (majority). A point of order must be raised at the time of the violation of procedure and is out of order after other business has intervened.

5. Any decision or ruling of the Chair involving opinion or judgment may be appealed by any member who rises to a point of order and states, "I appeal from the decision of the Chair." The House then votes to sustain or overrule the decision. Appeals cannot be made on decisions based on established facts or accepted rules.

6. Any motion, act or request may be granted by the House by unanimous consent if not in violation of the By-Laws. One single objection by a voting member destroys unanimous consent.

The following are the most commonly used motions listed in order of their rank. By "rank" is meant that when any one of the following motions is under consideration of the House, it is in order to propose any motion listed above it while those below are out of order.

The Privileged Motions:

1. Fix a time to which to adjourn
2. Adjourn
3. Recess
4. Raise a question of privilege
5. Call for orders of the day

The Subsidiary Motions:

1. Lay on the table
2. Previous question
3. Limit, or extend, debate
4. Postpone to a certain time
5. Commit or refer
6. Amend
7. Postpone indefinitely

The Principal Motions:

All main motions, resolutions, etc., which are proposed by a member of a committee.

Conclusions

The best place to influence legislation is at the hearings of the Reference Committees. These hearings are held to give each member an opportunity to express his opinion more informally.

Next: Become familiar with the material under consideration. Learn and apply the rules, principles and procedures of parliamentary practice above and if your proposal fails to pass, it will be because you were unable to convince enough people you are right.

There are many more motions and rules governing their usage and good parliamentary procedure. For further reading you are referred to:

Revised Edition
Robert's Rules of Order
by General Henry M. Robert
Scott, Foresman and Company
Chicago, Illinois



Councilor Reports

Activities in the Councilor Districts of Kansas

FIRST DISTRICT

We are seeing some new faces among the physicians in this northeastern part of the state. Illness and age are handicapping a few of those who for so many years were active in their support of organized medicine. Their presence at state and local meetings is greatly missed.

Most of our doctors report a definite increase in the office and hospital practice of the over 65 group. Almost all hospitals are running at near capacity and nursing help is in short supply. Obviously 90 per cent of the patients are in the Medicare group.

The district meeting this year was hosted by the Atchison County Medical Society with their president, Dr. and Mrs. Charles S. Brady, in charge of all arrangements. The dinner meeting was held at the Atchison Country Club, October 19, 1966.

After the dinner the ladies of the Auxiliary met with Mrs. Emerson Yoder of Denton, their District Councilor. The guests and speakers for the ladies were Mrs. Lyle Glenn, president of the Auxiliary to the Kansas Medical Society and Mrs. Ernest Neighbor, the president-elect. The doctors met with these guests for an interesting and somewhat spirited discussion with Dr. James McClure of Topeka, president of the Kansas Medical Society. Dr. McClure brought everyone up to date on progress of the development of Title XIX, as well as some of the other problems facing the Medical Society in Kansas.

Mr. Kenneth Allen, representing Blue Cross-Blue Shield, also discussed some of the problems concerning the new Blue Shield plan.

Swede Swenson, the executive assistant for the Kansas Medical Society, was present and explained some of the policies of the AMPAC committee.

VIRGIL E. BROWN, M.D., *Councilor*

SECOND DISTRICT

District Two has had an interesting and worthwhile year. Most that has occurred could be listed on the credit side of the ledger.

The membership of the Wyandotte County Society has increased significantly during the past year. We now have over 200 members. The executive offices of the society have been moved to larger quarters and are in the process of being refurbished. This should continue to be a source of increased efficiency to the society.

A Medical Explorer Scout Post was organized in March, 1966, by Dr. Richard Gruendel and is sponsored by the Wyandotte County Society. This has been a very successful undertaking and Dr. Gruendel deserves our thanks for a very worthwhile program.

The society was appreciative to Dr. James A. McClure, president of the Kansas Medical Society, for his presence at the district meeting in November. He brought us up to date on the Society's efforts to help implement Title XIX in a more efficient manner.

The policy of ecumenism has at least partly pervaded the local medical community as evidenced by the following:

The Medical Council of the Metropolitan Area of Greater Kansas City is continuing to function in an increasingly effective manner. Many mutual problems are being dealt with more efficiently because of the Council's ability to transcend artificial boundaries. The need for it in this day of increasing professional contact is self-evident.

The Wyandotte County Society is happy to be co-operating with the Johnson County Medical Society as co-hosts for the annual meeting of the Kansas Medical Society. The program for this meeting has every earmark of being an outstanding one. The undersigned can, without fear of equivocation, recommend to the members of the Kansas Medical Society the program for the 1967 session. We welcome you to Kansas City and look forward to seeing you there.

JAMES G. LEE, JR., M.D., *Councilor*

FOURTH DISTRICT

A district meeting was held at the Besse Motor Hotel, Pittsburg, on November 22, 1966, at which time the Crawford County Medical Society was host for a social hour prior to a dinner meeting.

Our state president, Dr. James McClure, gave us an informative talk on recent and proposed legislation. This talk was supplemented by remarks from our executive secretary, Oliver Ebel, and from Jesse Prisock, representing Kansas Blue Cross-Blue Shield.

The district, insofar as the councilor is concerned, has no special problems, but the district is very short of physicians. Most of our cities would be ideal locations for many young and willing-to-work physicians.

W. G. RINEHART, M.D., *Councilor*

SIXTH DISTRICT

District 6 (Shawnee County Medical Society) has had an exciting and productive year. Our membership consists of the following: Active—182; Affiliate—2; Associate—3; Emeritus—10; Fellowship—7; Resident—6; Total—218.

We were saddened by the deaths of Drs. Geoffrey Martin, Donald Wakeman, and G. L. Kerley. Special note should be taken of the untimely death of Dr. William Menninger. Few doctors' deaths will leave such a void in the medical world. Our medical community will miss his warmth and understanding, and his great leadership.

The Program Committee was quite active, and the quality of the programs offered has been outstanding in the scientific fields. The programs have varied in scientific interests, and have been stimulating to the medical community.

Dr. Francis Collins, the year's previous councilor, was elected secretary of the Kansas Medical Society, and was replaced at the annual election of the Shawnee County Medical Society by Robert Lawson. We will miss Dr. Collins' representation. He contributed many hours of unselfish devotion to representing us on the Council, and served on various committees in light of his capacity. His advice was wisely given and readily received.

In November, 1966, District 6 met with the Auxiliary for the purpose of hearing a report of the President of the Kansas Medical Society. This dealt primarily with the recent legislation and some of the possible effects it may have on the medical community. Dr. and Mrs. George Wolf of the University of Kansas Medical Center were our honored guests.

The Shawnee County Medical Society participated in the annual health day program sponsored by the Farm Bureau Association and the Topeka-Shawnee County Department of Health. An interesting panel program with speakers from the medical society discussing "Some Concepts of Sex Education" was presented.

The June meeting was the usual picnic held with the wives, and it included golf and trapshooting. There was good attendance for the activities and a fine meal and celebration completed the day.

During the month of August, a city-wide measles vaccination program, sponsored by the City Board of Health and the Shawnee County Medical Society, was successfully completed. A total of 2,913 children were immunized. Fine cooperation on the part of the physicians giving their time, the schools, newspapers, and radios and television for an excellent educational program provided the impetus in keeping Topeka among the cities with the highest immunization level in its general population.

June 8 presented to our community a chance to review our disaster plan. This was involuntary and went into effect at 7:15 p.m. when a tornado struck the southwest corner of Topeka, and left Topeka on the northeast end of the city traveling approximately 35 miles an hour, damaging a path 22 miles long and one-fourth to one-half mile wide. There were 316 outpatient casualties, 64 persons admitted to the hospital, and 14 deaths. There were 633 homes destroyed, 403 severely damaged, 548 moderately damaged, and 1,500 slightly damaged. There was almost total destruction at Washburn University. Great tribute must be paid to the radio and television stations for their excellent coverage and warning of the approaching tornado. This undoubtedly prevented thousands of deaths and injuries. The entire medical community was activated in a short period of time, and worked efficiently through most of the night. The handling of patients was well-executed, and patient services were at a maximum with the facilities available. Untold doctor hours were spent responding to the disaster. Much of the ease of operation can be attributed to the disaster committees of various hospitals, and to the Civil Defense Committee of our medical society. We were extremely proud of our physicians and the way they responded to this disaster.

The doctors, as individuals, participated in an interprofessional day held at a local country club. Trapshooting and golf were the highlights followed by a pleasant social evening for the medical and paramedical groups.

The Shawnee County Medical Society honored Drs. Wilson K. Hobart and Herbert Gootee by installing these members for practicing medicine for 50 years.

The School Health Committee has been active, working in close cooperation with the school officials to supervise and improve the health of our school children.

The Legislative Committee, under the able direction of Arthur Cherry, has been extremely active sponsoring meetings with the legislators so we could become better acquainted with our representatives and advising our legislators that we would be most happy to consult with them on any issue pertaining to medicine at any time. Much new legislation is coming forth that will influence the outcome of medicine for years to come. It is the policy of this committee to help the legislators understand the significance of legislation on which they will have a vote.

District 6 is again proud to be available for medical services to legislators and their families during their residence in Topeka.

Our members have voluntary assessments, in addition to dues, to help support the Stormont Medical

Library, and the Topeka Science Fair. The Library Committee has been extremely active. We are fortunate to have a retired physician, Dr. James M. Mott, acting as our director. Much of the success of the library is attributable to Dr. Mott.

The society continues its policy of providing subscriptions of *Today's Health* to all junior and senior high schools in the county.

The society still offers telephone answering service to all members in the community, and helps hundreds of people select a family physician, or helps in an emergency.

We are still strong in our support of AMPAC and KaMPAC.

Our members have been actively working with varying problems in our community dealing with phases 1 and 2 of the new building program of Stormont-Vail Hospital, the school of nursing, and working toward the proper utilization of Medicare and numerous other concerns for health education and supervision of our populace.

The Auxiliary to the Shawnee County Medical Society, in cooperation with the Shawnee County Medical Society, sponsored a public dance for the AMA-ERF. Buddy De Franco and the Glenn Miller orchestra provided the entertainment for the evening. There was a large attendance and a considerable amount of money was raised for donation to the AMA-ERF. Much credit to the success of the dance should go to the Auxiliary who contributed a large amount of effort for this worthy cause.

The Board of Directors met with the Blood Bank Committee of the local chapter of the American Red Cross to air differences of opinion about the collection of blood in Shawnee County. Better understanding of the problems of both organizations and a desire to cooperate further in evaluation of our local problems was the outcome of this unusual meeting.

The Education Committee of the Shawnee County Medical Society has chosen as its goal the improvement of programs for the future medical careers clubs of the various high schools in order to interest more students in medical and paramedical careers.

We wish to thank Mr. Ray Selbach, executive secretary of the Shawnee County Medical Society, and his staff for their excellent cooperation and work making it easier for the doctors to handle some of the extracurricular activity.

ROBERT C. LAWSON, M.D., *Councilor*

SEVENTH DISTRICT

The District Council meeting of November 1, 1966, was well attended. We were honored by the presence of Dr. and Mrs. James McClure, Dr. Mc-

Clure brought us up to date on the subject of Title XIX. He informed us of the decision of the House of Delegates that we would insist upon using customary charges and we would insist upon Blue Cross-Blue Shield being the fiscal intermediary.

We were also honored by the presence of Mrs. Lyle Glenn of Protection, and Mrs. Ernest Neighbor of Kansas City, Kansas, president and president-elect respectively of the Woman's Auxiliary to the Kansas Medical Society.

The problems in this district are no different than those elsewhere in the state and they nearly all revolve around the recent inception of government medicine. Many questions are raised concerning utilization review committees as to their worth, effectiveness, and authority. Considerable doubts exist regarding the necessity of "certification" and "re-certification."

Active interest and study is taking place in the district regarding hospital beds available and regarding the number of beds needed. There is a continual effort to further improve the quality of medical care.

Our delegates to the Kansas Medical Society are active and diligent in their attendance and are anxious to add their opinions in an attempt to guide the Society through these difficult times.

RICHARD F. CONARD, M.D., *Councilor*

EIGHTH DISTRICT

The component societies of the Eighth District presented no special problems or reports to their councilor during the past year.

The society meetings in Butler and Cowley Counties have been well attended this year. The circuit courses of the University of Kansas Medical Center were held in Winfield, with an excellent attendance from Kansas and Oklahoma.

Another joint meeting of the Cowley County Medical Society and the Ministerial Alliance of Cowley County was held on February 16, 1967, in Arkansas City, with another good attendance.

Our District Eight meeting was held in Arkansas City on October 27, 1966, with a good attendance. We were pleased to have our president, Dr. James A. McClure, and Mr. Oliver E. Ebel representing the Kansas Medical Society and presenting its policy and proposed legislation. Mr. Jesse Prisock discussed Blue Shield plans and policy for the meeting.

I wish to personally thank each and every member in the district for their help and cooperation during the past year.

BRUCE G. SMITH, M.D., *Councilor*

NINTH DISTRICT

A meeting of the District was held in Salina in November of 1966, conducted by Doctor McClure, explaining the general problems of the profession over the state and particularly leading a discussion as to the relationships of the profession to the implementation of Medicare.

In February, 1967, the meeting was held with Blue Shield and representatives of the Council to explain the implementation of Section 18 and to discuss various problems regarding billing, etc., as well as the multiplicity of plans being offered in the insurance program.

The Healing Arts Board had revoked the license of a physician in this District. This action has recently been negated by a District Court decision.

S. C. McCRAE, M.D., *Councilor*

TENTH DISTRICT

The component societies of Council District Ten are Reno, Rice, McPherson, Harvey, and Marion Counties.

Reno County held their annual fall meeting, to which they invited neighboring counties, in September at the Baker Hotel in Hutchinson. Our president, Dr. James A. McClure attended. This meeting was designated as a council meeting. I was unable to attend and asked Dr. John Blank to substitute for me.

The Marion County Medical Society served as host to Harvey and McPherson County Societies in November and were pleased to meet Dr. George A. Wolf, Jr., the newly appointed Dean of the University of Kansas School of Medicine. Dr. Wolf expressed his interest in advancing the school and was pleased with the cooperation of the Kansas Medical Society. We extended to him our best wishes and encouraged a program that will furnish Kansas more general practitioners.

We have accepted Medicare and while we agree that it may be OK for those now eligible for those services, we are sympathetic to the young adults just getting started in life who have to pay for everything they get plus the burden of the tax deductions to maintain this and other ill-advised, unnecessary giveaway programs.

Members of the societies in this district have been meeting to help some nursing homes attain skilled rating by organizing medical staffs to assist the administrators and nursing staffs with their problems in caring for their patients, working out transfer agreements, and other details of the Medicare program.

Several of our smaller communities need general practitioners.

We urge all members of District Ten to attend the 108th Annual Session of the Kansas Medical Society, April 30 through May 3, 1967, at the Town House Hotel in Kansas City, Kansas. Your society is what you make it. Let your wishes be known and help implement them.

RALPH R. MELTON, M.D., *Councilor*

ELEVENTH DISTRICT

The year 1966, with the passage of Medicare, the Heart Disease, Cancer and Stroke Program and the many other health programs which are now being considered at the state and national levels, has brought the medical profession to a crossroads. The past now serves only as a reference point and the courses we take in the next few years will, in all probability, determine the basis on which medical care is rendered in the future. With these new trails to be charted, it will be paramount that the individual physician become more knowledgeable in the socio-economic areas.

The highlight of 1966 was the opportunity for the Eleventh District to host the State Society's Annual Convention here in Wichita. A new concept in programming was initiated whereby the participants were taken to the various hospitals for live case presentations and discussions by the guest speakers. This new innovation seemed to be well received and will, more than likely, be continued at future State Conventions.

The membership of the Eleventh District continues to grow, and, at the end of the year 1966, its membership totalled 375. The society has continued during the year to inform the public, as well as its members, regarding the various new medical programs. During June, the society, in cooperation with the *Wichita Eagle* and *Beacon*, conducted a public forum on the Medicare program.

During September, the society sponsored a joint meeting involving the dental, pharmaceutical, veterinarian, legal and engineering professions. This meeting, which drew some 425 individuals, was to stimulate interest among the professional people for their need to become more knowledgeable and involved in the political areas on all levels of government.

The society conducted its fifth Immediate Care Course during the year and, since the inception of these courses, approximately 600 paramedical people have received this training. In a recent article carried by the *Wichita Eagle*, a local police officer, after having performed an emergency childbirth, commented on the "valuable courses I have ever attended. I was real surprised that everything went exactly the way they told me it would, and I knew just what to expect." In relation to these courses, the society, in

cooperation with the State Society, has completed a standardized course guide entitled "Immediate Care of the Sick and Injured." It appears that this book will not only be used throughout the state of Kansas but will be used by the U. S. Public Health Service throughout the United States in conducting similar courses.

During the year, a local committee, composed of physicians, hospital administrators, medical education directors and Wichita State University representatives, was organized to develop a local program which will work with the Regional Center at the University of Kansas Medical Center under the Heart Disease, Cancer and Stroke legislation.

Another undertaking of the society was reorganization of the Sedgwick County Disaster Program. This will be a coordinated program among all organizations involved and will bring about a much more efficient type of program.

The society again co-sponsored with the Wichita Professional Engineering Society the Tenth Wichita Regional Science Fair and, with the local Health Department, a community wide educational program on poison prevention.

The society continued to cooperate with the Wichita Board of Education and the Sedgwick County Health Department in organizing and implementing the Head Start and Title III Health Programs which provide medical services to the pre-school age children from the poverty designated areas of the city.

To further the society's stepped-up public relations program, copies of the AMA's *Today's Health Guide* was purchased and donated to all public and parochial junior and senior high school libraries in Sedgwick County.

The society sponsored its first annual "Press Party" to which all local news mediae were invited. This provided an excellent opportunity for members of the Board of Directors to become more personally acquainted with the local news mediae representatives.

During March, the society participated in a county-wide packaged hospital disaster exercise which was designed to evaluate the effectiveness of this aspect of the community's disaster program.

To further the effectiveness of the society's new commission system which was established in 1964, a new position of President-Elect was created. This allows the incoming President each year, before taking office, to become better acquainted and more knowledgeable of the society's activities and problems.

During the year, the society discontinued operation of its medical library which has since been moved to the Sedgwick County Hospital. The existing space left in the society building has been converted into

a new conference room for the society's smaller meetings.

During November, the society sponsored a Diabetes Seminar, with all Kansas physicians being invited.

E. W. CROW, M.D., *Councilor*

TWELFTH DISTRICT

We have had no problems in this district this year. There have been no deaths and no new doctors.

We had one district meeting in the fall, concerned mainly with the Blue Shield prevailing fee plan. Dr. George Gsell represented the Kansas Medical Society at this meeting. Information from the state office has been forwarded to the component county societies.

F. P. WOLFF, M.D., *Councilor*

THIRTEENTH DISTRICT

This councilor is happy to report that medical affairs in this district have been rather quiet during the past year. There still exists the chronic shortage of doctors in many communities, made worse in some places by calls to the armed services.

The advent of Medicare caused no severe upset, though there continues to be debate over its effectiveness and accomplishments. Financial considerations in connection with Medicare, and some fairly glaring faults with so-called supplementary insurance, have been vexing.

This district has been selected as a "Pilot Study" district for community planning in health resources and activities. This study is being made in cooperation with the State Board of Health, the medical and hospital organizations, the Kansas Health Facilities Information Service, and allied health and lay groups. This councilor was asked to secure the services of medical personnel for this group, and is gratified to report the willingness of the doctors approached to serve in what may be a very important and certainly lengthy endeavor.

This councilor, having now completed the total legal tenure in office, is not unhappy to relinquish his position. It has been an inspiration and a pleasure to take part in the deliberations of the Council and in the formulation of Society policy. It is with deepest gratitude and thanks that the help of all doctors in this district, and in the council and state Society office, is acknowledged. Such help and cooperation have made it possible to serve even as little as I did.

A. M. CHERNER, M.D., *Councilor*

FIFTEENTH DISTRICT

The 15th Council District had its annual meeting in the latter part of November. Our meeting this year was held at the Liberal Country Club and was hosted by the Seward County Medical Society. All of those who attended had a delightful time. It was felt that the Seward county society should be commended for their efforts.

At the annual meeting of the council district, our state president, Dr. James McClure, spoke to us about the problems that we are facing from the legislative standpoint for the coming year and the changes that are being invoked because of the new yearly meeting of the assembly. We all felt that we benefited by his discussion of the problems that face the medical profession.

On the distaff side, Mrs. Lyle Glenn of Protection was unable to attend the meeting because of a conflict in schedules, and sent as her representative Mrs. Marjorie Scagnelli, past president of the Auxiliary. The women met separately and Mrs. Scagnelli discussed the tremendous importance of legislative planning as far as the medical profession was concerned.

By the time this report reaches the press, I will have completed my sixth year as the councilor of the 15th District and will be replaced at the May meeting by a new councilor. I would like to take this opportunity in the report to thank the delegates from Seward, Iroquois and Ford counties for allowing me to serve as their representative over the past six years. At the termination of this period, I am even more firmly convinced than I was at the beginning that the physicians must become totally involved in the state activities in the functions of their Society, and if we are going to effectively combat those forces that are working against us as a profession we must become totally involved in our societies, our council district, our state Society and the AMA and political party of our choice. It is only by these means that we will be able to bring about changes that we believe to be desirable.

Again I wish to thank the district for the privilege of having the opportunity to serve them.

EVAN R. WILLIAMS, M.D., *Councilor*

SIXTEENTH DISTRICT

The 16th Council District is composed of counties in the northwest portion of Kansas. A dinner meet-

ing of the doctors and their wives was held in Colby in November. We were honored to have as our guest and speaker for the evening, the president of the Kansas Medical Society, Dr. James McClure of Topeka. Dr. McClure spoke to the group concerning the many problems facing the Medical Society this coming year.

The group was further honored to have as their guests Dr. and Mrs. L. G. Glenn of Protection. Mrs. Glenn is president of the Woman's Auxiliary to the Kansas Medical Society. After the dinner the Auxiliary adjourned to a separate meeting area to hear an address by Mrs. Glenn.

Your councilor attended a meeting of the Council in Topeka on October 2, 1966, and attended the special meeting of the House of Delegates in Topeka on March 5, 1967.

The doctors of this area, like those in the rest of the state and nation, are adjusting to the changes brought on by Medicare. We are still interested in trying to improve our medical knowledge as evidenced by the high percentage of doctors in attendance at the postgraduate circuit courses. The problem of attracting new physicians to the area and keeping them here is still with us.

JAMES J. MARCHBANKS, M.D., *Councilor*

EIGHTEENTH DISTRICT

Activities at the Ottawa Hospital were concerned mainly about construction of new facilities and organizing and staffing these additions. Construction of a new extended care facility for the Lawrence Memorial Hospital is contemplated and plans are now being drawn. Several physicians have moved away from the area, leaving the overall balance about the same. The Blue Shield full coverage schedule has been put into effect and approved in this area. Few complaints have been received. There apparently was considerable delay in some of the payments from Medicare in the past but these are starting to catch up.

Considerable interest has been generated in the action of the State Legislature and its handling of Title XIX and we are waiting to see what exact legislation will be finally passed.

ROBERT W. HUGHES, M.D., *Councilor*

House of Delegates

Special Session, March 5, 1967, Topeka

The House of Delegates of the Kansas Medical Society met in a special session at Topeka on Sunday, March 5, 1967. The primary purpose for this meeting was to discuss the implementation of Title XIX.

The following represents all actions taken at this meeting.

1. That the Society go on record voicing vigorous opposition to the identification of any physician service with benefits available through any *hospital plan unless* they are specifically purchased as physician services, and

That the Society oppose the concept of Part C in H.R. 5710 currently before the Congress, and

That no physician's service shall be paid from hospital trust funds, and

That this be transmitted as the policy of the Kansas Medical Society to the Board of Trustees of the American Medical Association, and

That the president of this Society submit this statement to the Kansas Congressional delegation.

2. In the Kansas implementation of Title XIX, no physician services shall be identified with hospital services or paid out of hospital trust funds.

3. The Kansas Medical Society will cooperate under Title XIX provided physicians' services are paid on the basis of usual and customary fees and through the fiscal intermediary as in Title XVIII.

4. WHEREAS, The officers and others of our Society selflessly have expended greatly of their energies in behalf of establishing an equitable and satisfactory implementation of Title XIX, and

WHEREAS, The only power that the physicians of Kansas have in the determination of the final provisions of the Kansas Plan for Title XIX is their willingness or unwillingness to participate in such plan, and

WHEREAS, The participation of Kansas physicians may be accomplished easily piecemeal and willy-nilly, though great numbers of such physicians object to the plan,

Therefore, Be It Resolved, That the House of Delegates be given the opportunity to vote to accept or not to accept the final Kansas Plan for Title XIX before any implementation of physicians' services as vendors of health care has occurred, and to advise the members of the Kansas Medical Society of their decision and recommendations regarding such participation, and

Be It Further Resolved, That our spokesmen be in-

structed to inform all of those with whom they bargain that it is the policy of the Society that implementation of physicians' services shall not occur until the Society has had an opportunity to vote on such final and complete plan.

5. The Kansas Medical Society shall request the legislature to write into the law provisions that establish a professional advisory committee and a medical consultant under Title XIX and define their duties and responsibilities.

NOMINATING COMMITTEE

The Nominating Committee met in Topeka on Sunday, March 5, 1967, and submits the following names as candidates for the elective offices of the Kansas Medical Society:

President-Elect

John L. Morgan, M.D., Emporia. Born in 1915. Graduated from the University of Pennsylvania School of Medicine in 1940. Has served as Councilor and chairman of committees.

First Vice President

Leland Speer, M.D., Kansas City. Born in 1912. Graduated from the University of Kansas School of Medicine in 1936. He has served as Secretary.

Second Vice President

Abraham M. Cherner, M.D., Hays. Born in 1910. Graduated from the University of Chicago School of Medicine in 1936. Has been Councilor and chairman of committees.

J. Gordon Claypool, M.D., Howard. Born in 1916. Graduated from the University of Kansas School of Medicine in 1941. Has been Councilor; currently serving on the Blue Shield Board.

Kenneth L. Graham, M.D., Leavenworth. Born in 1921. Graduated from the Ohio State University College of Medicine in 1945. Has been chairman of committees; currently serving on the State Board of Health.

Edward F. Steichen, M.D., Lenora. Born in 1905. Graduated from Rush Medical College in 1931. Has been Councilor; currently a member of the Kansas Legislature.

Evan R. Williams, M.D., Dodge City. Born in 1925. Graduated from Northwestern University School of Medicine in 1952. Currently serving as Councilor and has been chairman of committees.

Secretary

Francis T. Collins, M.D., Topeka. Born in 1914. Graduated from the University of Kansas School of Medicine in 1943. Has served as Councilor; currently serving as Secretary.

Treasurer

John L. Lattimore, M.D., Topeka. Born in 1894. Graduated from the Fort Worth School of Medicine in 1918. Is currently serving as Treasurer.

(Continued on page 210)

Amendments to Constitution

The Commission on Society Organization is submitting the following amendments to the constitution of the Kansas Medical Society. It is required that amendments to the constitution be published twice in the JOURNAL, therefore, the following will again be printed in the April issue.

The Commission on Society Organization is also making extensive amendments to the By-Laws and these will be submitted to the House of Delegates at the annual meeting in May.

CONSTITUTION

ARTICLE I—Title and Definition

The name of this organization is THE KANSAS MEDICAL SOCIETY. The SOCIETY is comprised of the Component Societies chartered by this organization.

ARTICLE II—Objects

The object of this SOCIETY is to unite the medical profession of the State of Kansas in promoting the science and art of medicine and protecting the health of the citizens of this State.

ARTICLE III—Component Societies

County or multi-county societies holding a charter from this organization are known as Component Societies.

ARTICLE IV—Members

THE KANSAS MEDICAL SOCIETY is composed of members of the Component Societies and others as provided in the By-Laws.

ARTICLE V—House of Delegates

The House of Delegates is the primary legislative and governing body of this SOCIETY. The members of the House of Delegates will be elected by the Component Societies as provided in the By-Laws. This body will transact the business of the SOCIETY and will elect officers except as otherwise provided in the By-Laws.

ARTICLE VI—Officers

The officers of this SOCIETY are a President, a President-Elect, a First Vice President, a Second Vice President, a Secretary, a Treasurer, a Speaker and a Vice Speaker of the House, Delegates and Alternate Delegates to the American Medical Association. The

terms of office, qualifications, and method of election shall be provided in the By-Laws.

ARTICLE VII—Council Districts and the Council

The boundaries of the Council Districts shall be specified in the By-Laws. The Council consists of one Councilor from each Council District, the officers of the SOCIETY, and advisory members as designated in the By-Laws. The Council may transact business of the SOCIETY between sessions of the House of Delegates subject to the approval of that body and as prescribed in the By-Laws.

ARTICLE VIII—Meetings

The SOCIETY will hold an annual meeting for the presentation and discussion of subjects pertaining to the science and art of medicine. The House of Delegates shall convene at the annual meeting and at other times as necessary for the transaction of the business of the SOCIETY. The place of the annual meeting shall be approved by the House of Delegates, following a recommendation of the Council.

ARTICLE IX—Funds, Dues, Assessments

Funds for the functioning of this SOCIETY shall be raised by an equal annual dues or by assessment of the Members who are subject to these charges as provided in the By-Laws. The amount of dues and assessments shall be determined by the Council and approved by the House of Delegates.

ARTICLE X—Seal

The following insignia shall be the official seal of this SOCIETY:



The official seal shall at all times remain in the custody of the Secretary.

(Continued on page 210)

Amendments to Constitution**ARTICLE XI—Amendments**

Amendments to this Constitution require an affirmative vote of two-thirds of the Delegates present provided the question has been introduced at the previous annual session, or upon recommendation by the Council and published twice in THE JOURNAL OF THE KANSAS MEDICAL SOCIETY, or submitted by the Council to each Component Society at least two (2) months in advance of the meeting.

Nominating Committee

(Continued from page 208)

AMA Delegate

John C. Mitchell, M.D., Salina. Born in 1913. Graduated from the University of Kansas School of Medicine in 1938. Past president of the Society and has served one term as AMA Delegate.

Alternate AMA Delegate

William J. Reals, M.D., Wichita. Born in 1920. Graduated from Creighton University School of Medicine in 1945. Has served as Councilor; currently Alternate AMA Delegate.

House of Delegates

Town House Motor Inn

Sunday—April 30

3:30 p.m.—Grand Ballroom

Wednesday—May 3

2:00 p.m.—American Royal Room

Reference Committees

Monday—May 1—8:00 a.m.

Committee No. 1—Wyandotte Room

Committee No. 2—Fairfax Room



Editorial COMMENT



Kansas City, April 30-May 3

Almost like a wedding party and you are invited! Two of the larger component societies, Wyandotte and Johnson, have united to bring you four days of serious study and festivity. The gifts are for you to receive—knowledge, entertainment, relaxation.

As at the wedding, there is something old. Old friends to see and old tradition to uphold.

And, something new. The scientific program on space medicine will look toward tomorrow. In fact, so new is the material they plan to bring that NASA required us to limit attendance to physicians and their personal guests. What you will learn is not yet for the public to hear.

New also is a special Sunday evening program for doctors and their wives. The guest speaker, through the use of slides, will bring you a hilarious and absolutely factual one-hour course on chiropractic from their own literature. You will long remember this event. You will enjoy it. The evening will be worth your while.

Borrowed from past sessions are those features you have long enjoyed—the athletic events and stag party

on Monday and, of course, the scheduled business meetings. Even here you will note a change in format designed to improve efficiency.

Blue is for you also, if you like smooth, soft music to dance by after a concert presented by a remarkably talented chorus from Kansas State University. The President's Annual Banquet will again be on Tuesday evening and this feature is among the highlights of the annual session.

Yes, you are invited to the party in Kansas City. There will be exhibits to see, scientific papers to hear, and programs at three hospitals where you are invited to participate in the discussion. A group of specialty societies will meet, hoping they can attract your interest in attending.

In all, it will be a great and memorable occasion, the one convention of the year in Kansas which is your own to enjoy and which will benefit you. And, in addition to all that, we need your guidance in the business sessions of the House of Delegates to direct the Society through the maze of political, social and economic hazards that lie ahead.



Personalities—IN KANSAS MEDICINE

George F. Gsell, Wichita, has been reappointed a member of the Committee on Rating of Mental and Physical Impairment of the AMA.

John E. Johnson, Kansas City, was elected secretary-treasurer of the Community Blood Bank of Kansas City Area, Inc., at the organization's meeting in February.

Officers of the medical staff of St. Thomas Hospital, Colby, were elected in February. **S. P. Hornung** is the new president and **R. C. Carleton** is serving as vice president. **F. L. Smith** was named chairman of the tissue committee. The new chairman of the medical records and utilization review committee is **H. R. Custer**.

William E. Ruth, Kansas City, discussed "Smoking and Lung Cancer" at a community lecture presented at St. Scholastica College, Atchison, in February. **Ira Morrison**, Atchison, is chairman of the medical advisory committee for the series of four lectures on "Guarding Your Health."

Newman V. Treger, Topeka, was a delegate to a regional conference of the American Society of Internal Medicine held in New Orleans in February.

William P. Williamson, Kansas City, has been reappointed to the American Medical Association's Committee on Medicine and Religion.

Lawrence Hart and **John Growney**, both of Atchison, presented a lecture on external heart massage at the February meeting of the Atchison Registered Nurses' club.

In March, **John O. Austin**, Garden City, attended a meeting of the American College of Cardiology. The meeting was held in Washington, D. C.

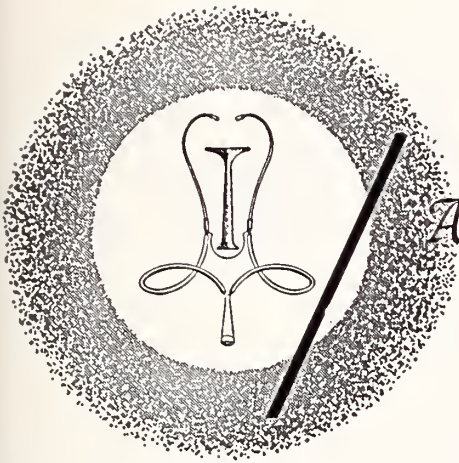
A reception, honoring **H. St. Clair O'Donnell** for 50 years of medical service to the Ellsworth area, was given by the Ellsworth Hospital Nurses' Association in February.

A symposium on rheumatic heart disease, sponsored by the Ford County Division of the Kansas Heart Association, was held in Dodge City in February. **Clair C. Conard**, Dodge City, presided over the meeting. Among the speakers were **Morgan U. Stockwell** and **Dexter L. Woods, Jr.**, both of Dodge City.

A seminar for physicians, clergymen and professionals in the field of mental health was held at Fort Hays State College in March. **William P. Williamson**, Kansas City, was the guest speaker. **Glen Hutchison**, Hays, represented the medical profession as a panel member at the meeting.

Three \$1,800 grants to encourage resident physicians to devote more time to the study of medical problems of the aging have been renewed by the American Geriatrics Society. The grants—inaugurated by Lederle Laboratories in 1962—will supplement the salaries the physicians receive. They will cover the period between July 1967 to June 1968.

Application for the grants should be addressed to the Chairman, Fellowship Committee, American Geriatrics Society, 10 Columbus Circle, New York, New York 10019. Deadline for applications is June 1, 1967. Announcement of the awardees will be made at the AGS annual meeting June 16-17 at Atlantic City.



Announcements

Professional meetings, conferences, and postgraduate courses of national importance are listed for the Doctor's Calendar. Notice of the session is posted in advance to allow the physician time to make preparations.

APRIL

- Apr. 17-20 15th annual clinical meeting, American College of Obstetrics & Gynecology, Hilton Hotel, Washington, D. C.
- April 21 Kansas School Health Advisory Council, Marymount College, Salina. For information write Ruth I. Hoover, Exec. Secretary, Hotel Eldridge, Lawrence.
- Apr. 30-May 3 Annual session, Kansas Medical Society, Town House Hotel, Kansas City, Kansas.

MAY

- May 3 Scientific session, *Current Concepts in Etiology and Diagnosis of Cancer*, American Cancer Society, Sheraton-Dallas Hotel, Dallas. Write: Dir. of Professional Education, American Cancer Society, Inc., 219 E. 42nd, New York City 10017.
- May 5 Annual seminar, *Pediatric Neurology*, Baptist Memorial Hospital, Kansas City, Missouri. Write: Medical Staff Office, Baptist Memorial Hospital, 6601 Rockhill Road, Kansas City, Missouri 64131.
- May 11 Annual Dr. F. G. Thompson, Sr. Lectureship, *Complex Supraventricular Arrhythmias*, Thompson-Brumm-Knepper Clinic, St. Joseph, Missouri. Guest speaker, Lewis E. January, M.D., president of the American Heart Association and professor of medicine, State University of Iowa.
- May 11-13 Annual meeting, Mid-Central States Orthopaedic Society, Sheraton-Prom Motel, Kansas City, Missouri. General meeting of Region VIII will be held in conjunc-

May 12-13

tion with the annual meeting. Write: H. O. Marsh, M.D., Secretary, Mid-Central States Orthopaedic Society, 14 Douglas Parkway, Wichita 67206.

May 13-17

Disorders of Growing Bone, Children's Memorial Hospital Seminar, Omaha, Nebraska.

201st Annual Meeting, Medical Society of New Jersey, Atlantic City. No registration fee for out-of-state/non-member physicians.

JUNE

June 15-16

Annual meeting, American Rheumatism Association, New York-Hilton Hotel, New York City. Write: Miss Margaret M. Walsh, Exec. Sec., 1212 Avenue of the Americas, New York City 10036.

June 26-28

Spring clinics in *Pediatrics* sponsored by the Children's Hospital, Denver. Morning seminars and lectures will be held at Vail, Colorado. Write: Joseph Butterfield, M.D., Children's Hospital, 19th Ave. at Downing, Denver 80218.

POSTGRADUATE COURSES

University of Kansas:

Apr. 17-19

Anesthesiology

Apr. 21

Infectious Diseases

May 8-9

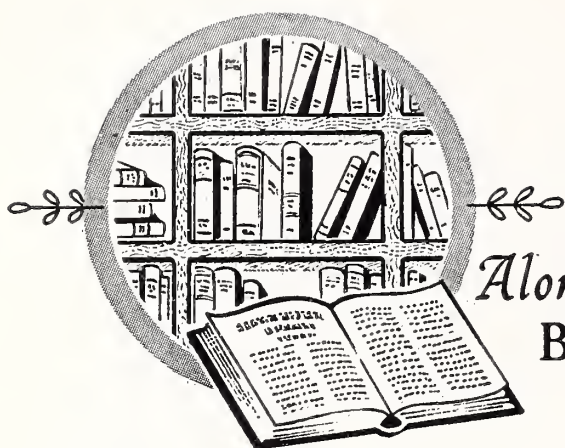
Cardiac Auscultation

May 24-26

Epilepsy, Syncope and Related Disorders

For further information write the Department of Postgraduate Medical Education, University of Kansas School of Medicine, Rainbow Blvd. at 39th St., Kansas City, Kansas 66103.

(Continued on page 216)



Along The BOOKSHELF

Clendening Medical Library

RECENT ACQUISITIONS

- Bauer, Julius. Differential diagnosis of internal diseases. . . . 3d rev. and enl. ed. Grune & Stratton, 1967.
- Bettelheim, Bruno. The empty fortress. . . . Free Press, 1967.
- Cameron, Bruce Molloy. Shaft fractures and pseudarthroses. Thomas, 1966.
- Donaldson, David D. Atlas of external diseases of the eye. C. V. Mosby Co., 1966- .
- Evans, Francis Gaynor, editor. Studies on the anatomy and function of bone and joints. Springer, 1966.
- Fetter, Bernard F. Mycoses of the central nervous system. Williams & Wilkins, 1967.
- Frieboes, Walter. Color atlas of dermatology. Saunders, 1966.
- Fry, John. Profiles of disease: a study in the natural history of common diseases. E. & S. Livingstone, 1966.
- Gordon, Jesse E., editor. Handbook of clinical and experimental hypnosis. Macmillan, 1967.
- Holmes, Joseph Masters. Gynaecology. Williams & Wilkins Co., 1966.
- Industrial Hygiene Foundation of America, Inc. Symposium on emphysema in industry. 1966.
- Johns Hopkins Hospital, Baltimore Nutrition Dept. Manual of applied nutrition. 5th ed. Johns Hopkins Press, 1966.
- Kjessler, B. Karyotype, meiosis and spermatogenesis in a sample of men attending an infertility clinic. Karger, 1966.
- Kleegman, Sophia J. Infertility in women: diagnosis and treatment. Davis, 1966.
- Lader, Malcolm Harold. Physiological measures, sedative drugs, and morbid anxiety. Oxford Univ. Press, 1966.
- Lawson, Annette R. L. The recognition of mental illness in London. . . . Oxford Univ. Press, 1966.
- Leigh, Arthur George. Corneal transplantation. . . . Blackwell Scientific, 1966.
- Lewis, George C., editor. New concepts in gynecological oncology. Davis, 1966.
- Leydhecker, Wolfgang. Glaucoma in ophthalmic practice. Little, Brown, 1966.
- McConnell, R. B. The genetics of gastro-intestinal disorders. Oxford Univ. Press, 1966.
- Miller, Ashton. A synopsis of renal diseases and urology. John Wright, 1966.
- Mitchell, John Phillimore. A handbook of surgical diathermy. Wright, 1966.
- Nover, Arno. The ocular fundus: methods of examination and typical findings. Lea & Febiger, 1966 ©1964.
- Owen, Samuel Griffith. Electrocardiography. 1st ed. Little, Brown, 1966.
- Penrose, Lionel Sharples. Down's Anomaly. Little, Brown, 1966.
- Retterstol, Mils. Paranoid and paranoiac psychoses. . . . Thomas, 1966.
- Rob, Charles, editor. Abdomen and rectum and anus. Butterworths, 1966.
- Tähkä, Veikko. The alcoholic personality; a clinical study. Heisinki, 1966.
- University of Miami. Neuro-ophthalmology Symposium, Miami, Fla. Neuro-ophthalmology. v.3, Mosby, 1967.
- Warren, Shields. The pathology of diabetes mellitus. 4th ed. Lea & Febiger, 1966.
- Williams, Robert Evan Owen. Hospital infection; causes and prevention. Year Book Medical Publishers, 1966.



ARTERIOGRAPHY: PRINCIPLES AND TECHNIQUES by John L. Curry and Willard J. Howland. W. B. Saunders Company, Philadelphia, 1966. 328 pages illustrated. \$14.00.

The authors provide an introduction to the field of arteriography for community radiologists and other interested physicians. Detailed instructions pertaining to essential equipment and materials, film changers, contrast media, selections of needles, cannula, and catheters, and an extremely intricate review of techniques is set forth with great clarity. Complications and precautions are discussed in detail. The low incidence of complications is borne out somewhat by the careful response to details of technique. Each field of arteriographic study is described vividly including aortography, extremity arteriography, cerebral arteriography, renal arteriography, and selective arteriography of aortic branches other than the renals. I am impressed by the clarity and particular attention to fine detail offered.

The reproductions of radiographs are excellent, and the illustrations are extremely well chosen. Differential diagnosis for mass lesions involving the kidneys and other organs are discussed as well as localized ischemic areas. The advantages of catheter arteriography as opposed to aortography via the translumbar route is a worthwhile consideration for both vascular surgeons and urologists.

This book will be of great value to the community radiologist, the vascular surgeon, and as an introduction to arteriography for medical students and radiology, vascular surgery, and urology residents. The

field of vascular radiology has changed greatly and this book fulfills a great need in this endeavor.—*R.C.L.*

THE NEW WAY TO LIVE WITH DIABETES (A COMPLETE GUIDE) by Charles Weller and Brian Richard Boylan. Doubleday & Co., Garden City, New York, 1966. 116 pages. \$3.95.

This short, concise and informative book can be recommended to all diabetic patients. Some will use it carefully and gain much information and help from its pages. Other patients will profit less but they will be the ones needing personal counseling.

The tone of the book is comforting and reassuring; its language simple and understandable. It explains the types of diabetes in direct and careful words, how they differ and how they can be handled.

At a cost of but \$3.95, it far surpasses the usual booklets passed out by the pharmaceutical firms.—*J.C.*

SURGICAL DISEASES OF THE CHEST by Brian Blades (2nd edition). C. V. Mosby Company, St. Louis, 1966. 687 pages illustrated. \$25.00.

This book is a comprehensive reference work which should prove useful to surgeons, internists and students. The second edition has been brought up to date with recent review of surgery of cardiac and vascular pathology.—*R.M.B.*

KANSAS STATE DEPARTMENT OF HEALTH

TOPEKA, KANSAS

Division of Preventable Diseases—Division of Vital Statistics—Kansas Morbidity Incidence
Summary of Cases Reported in December, 1966 and 1965

Diseases	December		January-December Inclusive			
	1966	1965	5-Year Median 1962-1966	1966	1965	5-Year Median 1962-1966
Amebiasis	—	—	—	13	4	26
Aseptic meningitis	2	1	1	19	4	19
Brucellosis	—	—	—	9	4	8
Diphtheria	—	—	—	—	1	1
Encephalitis, prim., infect.	1	10	2	54	52	52
Encephalitis, post-infect.	—	1	*	—	7	*
Gonorrhea	262	196	198	3178	2634	2901
Hepatitis, infectious	18	38	34	183	460	422
Meningococcal meningitis	3	2	2	20	17	15
Pertussis	—	—	—	11	23	23
Poliomyelitis	—	1	—	—	1	—
Rheumatic fever	—	1	1	2	5	4
Salmonellosis	15	14	14	275	315	309
Scarlet fever	14	3	18	126	88	151
Shigellosis	2	2	2	64	120	120
Streptococcal infections	190	331	306	2348	3063	1848
Syphilis	94	64	81	1239	918	1055
Tinea capitis	4	17	8	63	78	78
Tuberculosis	22	34	28	285	270	270
Tularemia	1	2	2	1	6	7
Typhoid fever	—	—	—	7	1	2

* Statistics for 5-year median not available

Announcements

(Continued from page 213)

University of Colorado:

Apr. 27-29 *Clinical Dermatology* (Limited to 32)

June 19-23 *Marriage Counseling for Physicians and Clergy* (Estes Park)

For further information, write the Office of Postgraduate Medical Education, University of Colorado School of Medicine, 4200 E. Ninth Avenue, Denver 80220.

Menorah Medical Center:

May 19-20 *Modern Trends in Medical Management*

June 12-16 *Neurologic and Sensory Diseases*

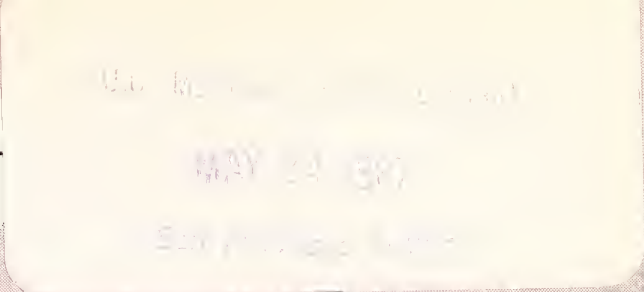
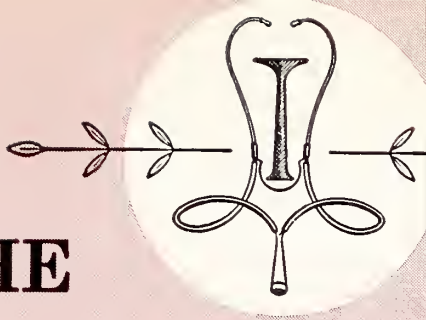
For further information, write the Department of Postgraduate Education, Menorah Medical Center, 4949 Rockhill Road, Kansas City, Missouri 64110.

June 5-7 *Clinical Electroencephalography*, sponsored by the American EEG Society, Philadelphia. Write: Donald W. Klass, M.D., EEG Course Director, Mayo Clinic, Rochester, Minnesota.

NEW MEMBERS

The JOURNAL takes this opportunity to welcome these new members into the Kansas Medical Society.

James G. Bridgens, M.D. Shawnee Mission Hospital Shawnee Mission, Kansas 66204	Jess W. Koons, M.D. 1121 N. Washington Liberal, Kansas 67901
John G. Campbell, M.D. 6100 Martway Shawnee Mission, Kansas 66202	Keith B. Kelley, M.D. 906 Sixth Street Clay Center, Kansas 67432
Delmont C. Hadley, M.D. Medical Arts Building Ottawa, Kansas 66067	David H. Rau, M.D. Medical Building Ellinwood, Kansas 67526



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has an atropine-like action which should be considered when prescribing diphenhydramine hydrochloride. **ADVERSE REACTIONS:** Side effects are generally mild and may affect the nervous, gastrointestinal, and cardiovascular systems. Drowsiness, dizziness, dryness of the mouth, nausea, nervousness, palpitation, blurring of vision, vertigo, headache, muscular aching, thickening of bronchial secretions, restlessness, and insomnia have been reported. Allergic reactions may occur.

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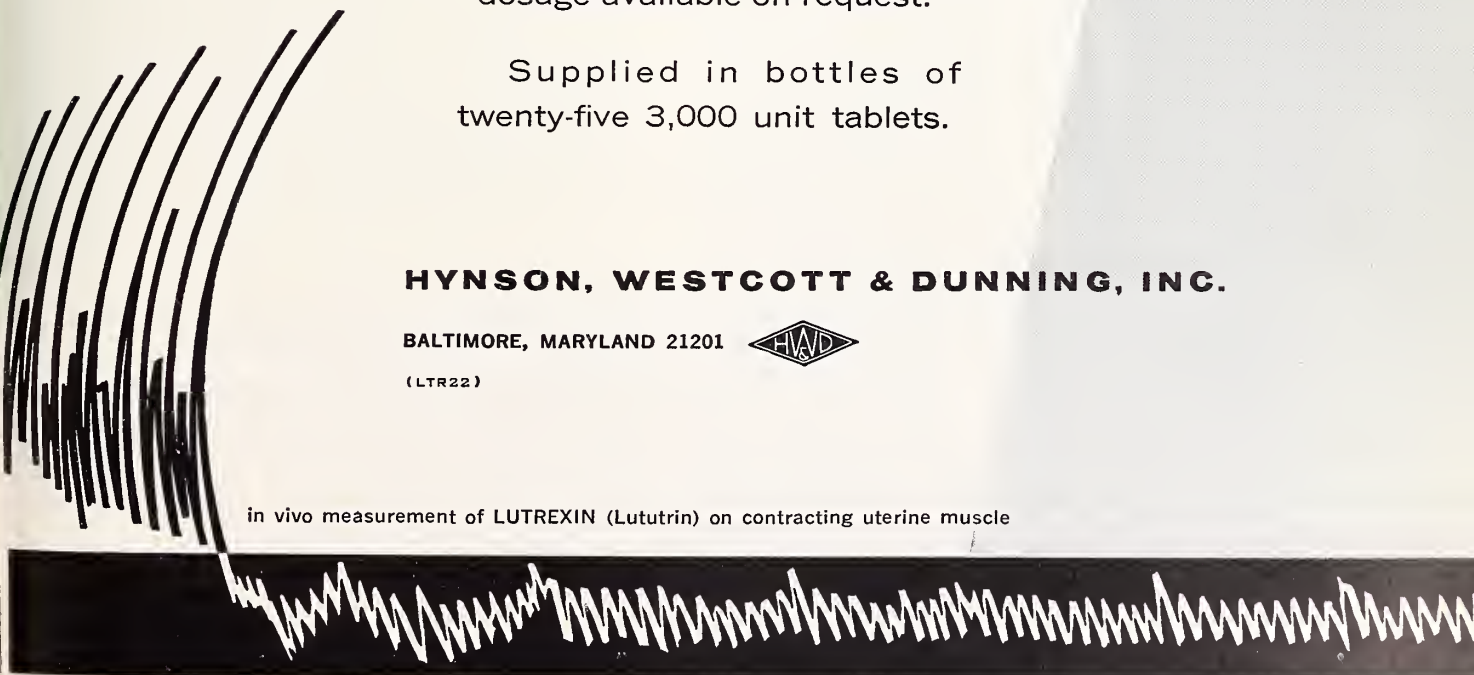
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The JOURNAL of the KANSAS MEDICAL SOCIETY

Contents for May

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Editor: Orville R. Clark, M.D., Topeka.

Editorial Board: The Editor; David E. Gray, M.D., Topeka; Richard Greer, M.D., Topeka; Donald R. Pierce, M.D., Topeka; John A. Segerson, M.D., Topeka.

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Managing Editor and Advertising Manager: Mary Rogers, 315 West Fourth Street, Topeka 66603.

Business Manager: Oliver E. Ebel, 315 West Fourth Street, Topeka 66603.

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Treatment of Hypotension

Technique and Prevention of Complications in Subclavian Central Venous Pressure

**GERALD D. NELSON, M.D., St. Louis; JAN B. DE BAKKER, M.D., and
JAMES H. HOLT, M.D., F.A.C.S., Wichita***

THE TREATMENT OF HYPOTENSION, except in the relatively short term hypovolemic patient, is always difficult. The intermittent monitoring of the central venous pressure has now become a refined and simplified technique and an invaluable adjunct in the diagnosis and treatment of hypotension of any etiology. The simplicity and availability in every hospital provides all physicians with a realistic and physiologic guide to proper fluid administration. The availability of the central venous pressure is even more attractive when it is realized that laboratory errors and false positives do not lead the physician to erroneous conclusions about the hemodynamics of a particular patient, as has sometimes been the case with blood volume determinations. The central venous pressure alone will not provide a diagnosis or correlate with the total blood volume as has sometimes been claimed, but will give a prudent and effective guide to fluid therapy.

The central venous pressure is discussed in relation to the physiology of the patient in shock. The importance and inter-relationship of adequate blood volume, vascular tone and the integrity of the cardiac pump is reviewed.

Central venous pressure monitoring is stressed as a diagnostic tool in the determination of the cause of hypotension. The importance of proper fluid therapy in relation to the cause of hypotension is reviewed with indications of the use of the central venous pressure.

The technique of cannulation of the subclavian vein is described with the complications that have resulted from this technique. A list of precautions is included for possible avoidance of the complications that have been encountered. The use of the central venous pressure manometer is presented as well as precautions to be taken to avoid false readings.

Our central venous pressure experience has been limited mostly to operative maintenance and post-operative care. However, we have frequently en-

* Presented at the 1965 meeting of the Kansas Chapter, American College of Surgeons in Wichita, and at the Southwestern Surgical Congress in Las Vegas, Nevada, April 1966.

At the time this paper was prepared, Dr. Nelson was a second year general surgery resident at St. Francis Hospital, Wichita. He is now a resident in plastic surgery, St. Louis University Hospitals, St. Louis, Missouri.

Dr. de Bakker is assistant chief of surgery, Veterans Administration Hospital, Wichita, and Dr. Holt is director of surgical education, St. Francis Hospital, Wichita.

countered compound medical problems, which have proven the central venous pressure all the more valuable, and some medical problems are in themselves indications for monitoring the central venous pressure. These indications include cardiac failure, renal shutdown, septicemia, fluid and electrolyte imbalance, peritonitis and patients with extensive thermal burns.

The purpose of this paper is to remind the practicing physician, regardless of his geographic location, of the simple techniques at his disposal to provide his patient with the optimal blood volume by the bedside use of intermittent central venous pressure readings. The use of central venous pressure and its relationship to the often confusing picture of circulatory imbalance is described.

Background

The evaluation of venous distension in various disease states has long been used as a sign of the state of venous return to the heart and a reflection of the cardiovascular status of the patient. The peripheral venous pressure as evidenced by the venous distension of the dorsum of the hand and external jugular vein is a familiar sign in congestive heart failure and superior mediastinal tumors. Manometer readings demonstrate that the venous pressure in the arm veins do not always accurately reflect the correct central venous pressure.⁵ The valves in these veins do not permit the free flow of blood to equalize with the superior vena caval pressures. Wilson and Owens now have a five year experience with monitoring the central venous pressure.⁷ During the past three years they have used the subclavian vein cannulation technique. The subclavian vein cannulation has been demonstrated to be more convenient and safer than cannulation of arm veins or the inferior vena cava.

Complications of pneumothoraces have occurred (discussed later). This apparently is the only complication if the catheter is used properly. The occurrence of a pneumothorax should not condemn the procedure but should "dictate careful evaluation and awareness that the complication can occur."⁷ The subclavian cannulation for determination of the central venous pressure now is well established as an efficacious procedure in the diagnosis and continued therapy of altered hemodynamics of the cardiovascular system.

Indications

The general indications of monitoring the central venous pressure are any patient in which unstable cardiovascular dynamics exist or can be anticipated as a possibility during the next 24 hour period of treatment.

1. Hypovolemia due to hemorrhage

In cases where prolonged or hidden hemorrhage is

occurring or likely to occur, the central venous pressure is a good monitor to determine if circulating blood volume has been lowered enough to effect the cardiac return. The central venous pressure is an evaluation of the true hemodynamics and is always quicker than obtaining a hemoglobin, hematocrit, or blood volume determination. Hypovolemia is more critical in the elderly and physically debilitated patient who can tolerate lowered blood volume less than the average patient. This lack of tolerance of hypovolemia is directly reflected in the central venous pressure and is, therefore, more valuable than knowing the true blood volume.

2. Non-hypovolemic shock, not of cardiac origin

Non-hypovolemic shock often occurs after hemorrhage with adequate replacement. This has sometimes been termed "irreversible shock." Shock can also occur anytime the peripheral vascular tone has been lost from any cause, including altered metabolism and electrolyte imbalance. The physiology of these mechanisms is not understood and is now the subject of intensive investigation.³ In this state the venous return to the heart is decreased, a relative hypovolemia exists, and a decreased circulating blood volume is available for the cardiac pump. The central venous pressure provides a direct monitor for the necessary volume of fluid administration in a state that otherwise can only be interpolated from a variety of physical findings.

3. Myocardial decompensation

In cardiac failure a rising central venous pressure is an early and reliable finding. If failure progresses far enough, it will eventually produce hypotension, and the central venous pressure will aid in the diagnosis. The central venous pressure is the only practical way cardiac decompensation can be diagnosed while the patient is under anesthesia.

4. Oliguria

Frequently oliguria presents itself at a time when the clinician is uncertain of the patient's exact state of hydration. If a low central venous pressure exists, the patient is hypovolemic, and the oliguric state is best treated by administration of fluids. If renal shutdown has occurred, intravenous administration is absolutely contraindicated. The finding of a rising central venous pressure will solve the dilemma.

Bedside Physiology

Most of the physical diagnosis signs relative to the circulatory system are utilized while monitoring the central venous pressure, the same as without the central venous pressure readings. These include pulse rate, pulse pressure, blood pressure, temperature, skin color, skin temperature and color of mucous mem-

branes and nail beds. Some of these signs, such as lowered blood pressure, appear after many other alterations in the cardiovascular system have already taken place.¹ Changes in the central venous pressure will often show early changes of altered physiology that can be corrected before the signs of cardiovascular collapse are present.

The pumping action of the heart is directly dependent on the volume of blood returned to the right atrium. This venous blood normally distends the vena cava to 4 to 10 cm. of water pressure and the central venous pressure as measured in the superior vena cava usually reflects a pressure in the same range. This figure, however, is not absolute and a changing central venous pressure is of more clinical significance than a single high or low reading. When the vena caval flow rate is reduced there is a concomitant reduction in the central venous pressure. This occurs in the hypovolemic state following hemorrhage. The reduction in the volume of the mechanical substrate for the cardiac pump will reduce cardiac output. The same occurs in the relative hypovolemic states of vasodilation, venous pooling, septicemia or entrapment of blood in the systemic circulation.

All of these conditions reduce the cardiac output by decreasing the cardiac return, and they can best be treated by mechanically increasing the fluid volume returning to the heart, regardless of the true blood volume. The failure to recognize the importance of cardiac return has been one of the pitfalls of the true blood volume determinations utilized in the larger hospitals today.⁸ The fact that a normal blood volume is present does not produce an adequate cardiac output if the blood is not being delivered to the heart. The central venous pressure is an indirect measurement of the volume of blood being delivered to the right atrium. A slow venous return will ultimately result in a steady rapid pulse, lowered blood pressure, sympathetic constriction of peripheral arterioles, pale clammy skin, and poor capillary perfusion of nail beds and lips. Both the blood volume and the integrity of the vascular bed are two important factors in the maintenance of an adequate cardiac output and systemic blood pressure.

The third factor responsible for maintaining an adequate cardiac output and normal blood pressure is the status of the cardiac pump. If heart failure ensues, the venous pressure rises. The rising venous pressure results in venous distension, plethora and eventual edema and pulmonary congestion. The myocardium may fail to respond adequately to the venous return as a result of primary myocardial weakness or as a result of a hypervolemic state produced by excessive intravenous administration of fluids. The myocardium responds, as stated in Starling's Law, with more forceful contractions with increasing distension of the ven-

tricular chambers. If over distension occurs, the myocardial fibers are weakened, and a rapidly decreasing cardiac output follows. At this point the arterial blood pressure drops. While these events cannot always be avoided by monitoring the central venous pressure, they will at least be recognized and properly treated by discontinuing the intravenous administration of fluids.

The measurement and constant monitoring of the central venous pressure provides an excellent starting point for the hypotensive patient. It immediately determines if an adequate, inadequate, or excessive amount of blood is being returned to the right atrium. This determination allows the physician to immediately proceed with a flow chart type of approach as to the cause of the altered cardiovascular dynamics.⁵ Before determining other therapeutic measures to stabilize the patient, proper fluid, in respect to volume, can be administered simply on the basis of the central venous pressure. While the central venous pressure is helpful in the diagnosis of a case of hypotension, its only therapeutic value is a guide to the administration of fluids to restore cardiac output.⁶ The central venous pressure reading alone can never be relied upon as a reflection of the true blood volume as has sometimes been published.⁴

The Subclavian Cannulation Technique

The patient is placed in a supine position with his arms at his side, head flat on the table, and his face turned away from the side the needle is inserted. The skin of the clavicular region is prepared with an antiseptic solution and one sterile towel is usually placed over the chest as a "working table" for the needle and catheter. A 14 gauge Intracath* handled with sterile gloves is disassembled. (A 17 gauge Intracath has been recommended for children.)⁶ We have found the disassembled Intracath allows more accurate and easy manipulation of the needle than using the assembled Intracath set as it is packaged. A local anesthetic is injected if the patient is awake and a 2 cc syringe is attached to the 14 gauge Intracath needle. This syringe serves the purpose of being an excellent handle for ease of manipulation and insertion of the needle and prevents air entering the chest should the needle be inadvertently inserted into the thoracic cavity. The needle is inserted through the skin one centimeter inferior to the inferior border of the proximal third of the clavicle. The direction of insertion is medial, slightly cephalad and as nearly parallel to the chest wall as possible. The point of the needle is then walked under the clavicle in the same direction so it will enter the angle formed by the clavicle with the first rib at its junction with the sternum. A good

* Intracath—Bardic Company, Murray Hill, New Jersey.

surface landmark for the direction of insertion is to point the needle toward the angle formed by the sternal and clavicular heads of the sternocleidomastoid muscle. The subclavian veins have been dissected in a number of cadavers and have always been found firmly adherent to the under surface of the medial head of the clavicle and are attached to the angle of the clavicle with the first rib and is the only vascular structure which is snugly nestled in this angle. If this angle is mentally visualized by the operator, there should be little difficulty in this type of cannulation (*Figure 1*). The 14 gauge two inch Intracath needle is short enough that it does not ordinarily enter the thoracic cavity if care is taken in its insertion. But it is often necessary to insert the needle to the hub to

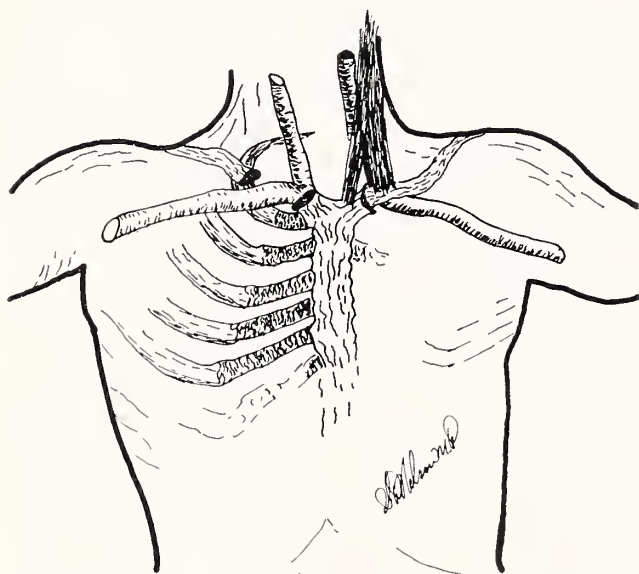


Figure 1. The subclavian veins are firmly adherent to the underside of the clavicle and are nestled in the angle formed by the first rib and clavicle at their juncture with the sternum. The angle formed by the medial and lateral heads of the sternocleidomastoid muscle provides an excellent surface landmark for insertion of the needle.

properly stabilize it in the subclavian vein for insertion of the catheter. Once venous blood is obtained the hub is stabilized by the left index finger and thumb and the syringe is removed and the free catheter is quickly inserted with the right gloved hand. The needle is then withdrawn over the catheter and attached to the appropriate intravenous fluid.

The catheter and needle should be secured to the chest wall. The method that has been most satisfactory as this hospital has been placing a 4-0 silk skin stitch at the entrance of the catheter into the skin and tying the catheter into place so as to occlude the skin opening about the catheter. This lessens the possibility of air embolism and provides a satisfactory anchor for the catheter.

Several commercially available disposable three-way manometer systems have been used and found to be satisfactory. An adequate manometer system has also been frequently made of disposable intravenous tubing, a three-way stopcock and a plastic ruler with a metric scale. This is taped to the I.V. stand and can be set up in minimal time if the nursing service makes up a central venous pressure tray supplied with the necessary items (*Figure 2*).

By turning the three-way stopcock the manometer is filled with intravenous fluid to a level higher than the expected central venous pressure. Then the stopcock is turned to open the manometer to the tubing leading to the subclavian vein. The fluid level in the manometer then quickly falls to the level of the central venous pressure. If the manometer is not first filled, blood may back up into the catheter and occlude it with clots. During the time a reading is not being taken the stopcock remains open from the intravenous fluid bottle to the indwelling catheter to maintain its patency.

A zero point is always established at the estimated level of the right atrium and the patient must always be in the same position at the time a reading is taken. The frequent movement of patients in the hospital from operating room to recovery room to intensive care, etc., has made it necessary to always place an ink mark on the chest wall at the estimated level of the right atrium. This gives an unchanging point of reference for the zero point of the central venous pressure, regardless of the number of times the patient is moved. On some of the wards the

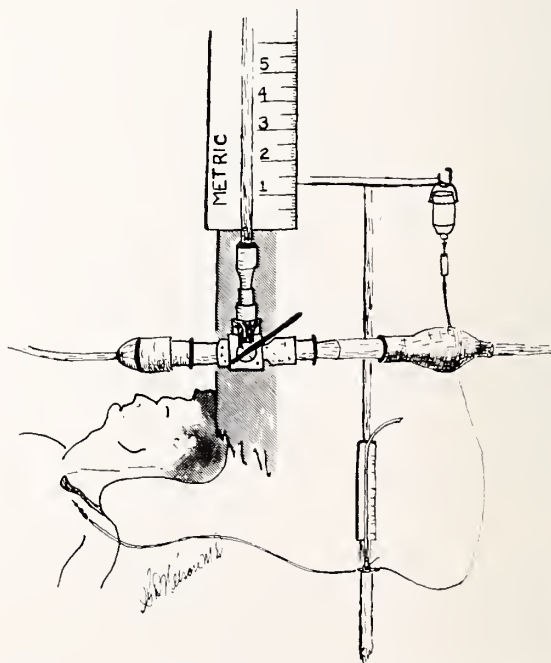


Figure 2. A standard three-way stopcock and plastic intravenous tubing provides a satisfactory manometer system.

nursing staff has made levels to assure the manometer scale is always level with the ink mark on the chest wall. This device has proved very satisfactory in providing accurate venous pressure measurements. The registered nurses have quickly become adept at taking and charting the central venous pressure and have frequently become fascinated with this adjunct in the nursing care of the critically ill patient.

Reasons for False Changes in the Central Venous Pressure

1. Moving the patient without readjusting the zero point of the manometer scale. (False high or low)
2. Taking a reading immediately after intratracheal intubation. (False high due to Valsalva effect)
3. Intermittent positive pressure of anesthesiologist bagging patient just prior to taking a reading. (False high)
4. Tracheal suction or coughing of patient just prior to reading. (False high due to increased intrathoracic pressure)
5. Packs on the superior vena cava or manipulation of the superior vena cava during surgery. (False high) It should be noted that decreases in the central venous pressure due to compression of the inferior vena cava represent true changes in cardiac return.
6. Failure to maintain patency of the catheter with a continuous intravenous fluid administration and formation of a clot on the catheter tip. (This situation will give erratic reading if a ball-valve effect is produced by the clot.)
7. The slipping of the catheter tip into the right ventricle. (False high)

Complications

The complication rate of the technique is about four per cent as found at this hospital and other similar series. Most of these complications are preventable, and they are best prevented by an awareness of their occurrence. The rate of complications is lower than when the peripheral vein of the upper extremities or lower extremities are utilized, mostly due to the high rate of thrombophlebitis in the limbs. The subclavian vein is more stable and easier to cannulate than the external jugular vein. The external jugular type of central venous pressure is easily and frequently occluded by neck rotation.

The most frequent complication is the pneumothorax. There have been published recently several cases where the needle not only entered the thoracic cavity, but blood and intravenous fluid were infused into the chest. The results of this type of error are usually disastrous. The establishment of a good return flow of venous blood is obviously essential before fluids are administered.

In the past year over 80 subclavian cannulations

have been performed by the resident staff at this hospital.* Two pneumothoraces have occurred, one which was directly attributable to the central venous pressure, the second was strongly incriminated but many facts in the case point to a spontaneous pneumothorax. In one critically ill patient the catheter was used for a 21-day period. The subclavian vein became thrombosed and septic emboli produced multiple lung abscesses. It is now felt that these catheters can be left in the subclavian vein for a period of six days with a wide margin of safety. The following precautions are recommended when this procedure is performed.

1. The pathway of the needle should be close under the clavicle.
2. A syringe should be on the needle during insertion.
3. Catheter should not be used longer than five days.
4. A slow intravenous drip should be maintained through the indwelling catheter to prevent clotting.
5. Heparin may be added to the intravenous fluid as an extra precaution, although it has not been routinely done and has not seemed necessary in our experience. In many cases of hemorrhage heparin is absolutely contraindicated.
6. If difficulty is encountered in cannulating the subclavian vein, unrestrained and persistently wider area of search with the needle should not be undertaken. We feel it is expedient and wise to do a small cut-down on the cephalic vein high in the deltoid-pectoral groove. The same catheter can be utilized with good results. This procedure provides an easy alternative should the subclavian cannulation prove difficult.

7. Fluid should never be administered through the catheter unless it is absolutely certain that a good venous return has been obtained.

8. The catheter should never be withdrawn through the needle with needle in the subclavian vein. The sharp point of the needle may cut the catheter resulting in embolization of the catheter tip into the heart.

9. Rapid administration of cold blood or any drug that will effect cardiac physiology should not be given through the central venous pressure catheter.

While it is felt that the four per cent complication rate can be substantially reduced by careful technique, it should also be remembered that as subclavian cannulation comes into wider usage, new complications will be found.

* St. Francis Hospital, Wichita, Kansas; Veterans Administration Hospital, Wichita, Kansas.

(Continued on Page 227)

Eosinophilic Gastroenteritis . . .

. . . *With Small Bowel Obstruction*

JESSE H. MARYMONT, JR., M.D., and
LEO K. CRUMPACKER, M.D., *Wichita**

EOSINOPHILIC INFILTRATION OF THE STOMACH, small intestine and colon is a rare disorder. Its recognition is important if unnecessary or unnecessarily extensive surgery is to be avoided. Published reports have appeared under a plethora of different and seemingly unrelated titles. These include Eosinophilic Granuloma of the Stomach,¹ Hemangioendothelioma,² Hemangiopericytoma,³ Fibroma,⁴ Neurofibroma,⁵ Gastric Lesion of Loeffler's Syndrome,⁶ An Unusual Type of Gastritis,⁷ and Idiopathic Eosinophilic Infiltration of the Gastrointestinal Tract, Diffuse and Circumscribed,⁸ to mention only a few. Because there are several, probably unrelated, entities with an infiltrate of eosinophils we have selected a descriptive title for this paper, which will briefly review the clinical and pathological features and present a recently encountered example.

Although the many descriptive terms indicate a divergence of opinion concerning etiology and pathogenesis, most authors agree that there are clinical and laboratory differences that permit division into two groups.

Group I: Polypoid Lesions

Most of the confusion in the literature concerns these. The commonly used term, eosinophilic granuloma, is most inappropriate. The lesion does not resemble the well known eosinophilic granuloma of bone, and in some instances eosinophils are only a minor component. It is not a neoplasm, and the histologic alterations of the mucosa, muscularis mucosa and submucosa suggest an inflammatory reaction with a predominately fibrous response. The term inflammatory fibroid polyp, introduced by Helwig and Ranier⁹ is preferable.

Inflammatory fibroid polyps may occur anywhere in the alimentary tract, but the large majority are in the antral portion of the stomach. They are most common in the sixth decade, but are seen in all ages

and have been reported in children. In most cases the roentgenographic picture¹⁰ is that of a benign polyp with a round, well defined filling defect and no interference with peristalsis or the flexibility of the stomach. However, in one series⁹ the possibility was entertained of gastric carcinoma in two of ten pa-

A case of diffuse eosinophilic gastroenteritis with small bowel obstruction in a 57-year-old man is presented. The classification, clinical features and treatment of these unusual and interesting lesions are discussed.

tients. Lesions of the small intestine and colon present as intraluminal filling defects after barium ingestion. A pedicle is sometimes recognized and, rarely, there may be an intussusception of the small bowel with the polyp as lead point.

Grossly the polyps may be either sessile or pedunculated and have been reported up to 19.5 cm. in diameter¹¹ although most are much smaller. They are covered by mucosa which may be ulcerated, are soft and rubbery and not usually attached to the muscularis. Microscopically they are characterized by fibroblastic, reticular and fibrillary connective tissue containing varying numbers of blood vessels and inflammatory cells. Eosinophils usually predominate but histiocytes, common in eosinophilic granuloma of bone, are rare.

Clinical symptoms depend on the site of involvement and include epigastric pain, vomiting, intestinal obstruction, melena and diarrhea. Peripheral eosinophilia is rare. Lesions do not recur after resection.

Group II: Diffuse Lesions

These are much less common than the polypoid type, about two dozen having been reported. They are most common in the sixth decade with an age range of 16 to 64 years, and a nearly equal sex distribution. All reported cases have had involvement of the stomach, and in about half there was also disease in the duodenum and jejunum. The ileum is usually

* From the Departments of Pathology and Surgery, Wesley Medical Center and the Wesley Medical Research Foundation, Wichita.

spared, and there have been no reports of this in the colon.

The roentgenographic picture is striking⁸ with annular narrowing of the distal stomach suggesting an extrinsic mass or infiltrating carcinoma. The mucosa may have a "cobblestone" appearance and there is rigidity with depression or absence of peristalsis. With small bowel involvement there is tubular segmental narrowing interspersed with dilated loops.

About half of these patients have a history of allergy, and the most striking feature is an almost universal peripheral eosinophilia, which may be as high as 60 per cent.

At surgery a thickened, indurated antrum was the common finding. In some cases there was involvement of the body of the stomach. The affected small bowel was likewise segmentally thickened, and some men were impressed with the similarity to regional enteritis.

Histologically the predominant feature is the extensive infiltrate of eosinophils. Histiocytes are absent, but small numbers of mononuclear cells and neutrophils are common. The infiltrate is usually heaviest in the muscularies between smooth muscle bundles, but has been recorded as chiefly mucosal, submucosal or serosal. Symptoms are similar to those of the polypoid type, and it has been suggested that these may be dependent on the portion of gut involved; i.e. mucosal infiltrate predisposing to bleeding and muscularis to obstruction.

Case Report

A 57-year-old white married man had been well until February 23, 1966, when he developed some vague abdominal distress several hours after eating rock lobster. The following day he developed an urticarial rash on the right side of the face and a vascular flush of the entire face. He had diarrhea followed by vomiting, and for the next nine days had intermittent nausea, vomiting and diarrhea alternating with obstipation. On at least one occasion he vomited food which was recognizable as having been eaten 48 hours previously. Early in this period he developed abdominal distension and gained nine pounds. On February 28 he was seen by one of us (L.K.C.) and placed on a bland diet, Donnatal and antacids. This afforded no relief, and on March 4 he began to vomit watery green fluid about every 20 minutes. He had not passed flatus or had a stool during the preceding 48 hours, and was admitted to Wesley Medical Center.

Pertinent past history included a severe allergic reaction in 1939, to a sulfa drug, taken for a sore throat, that required 30 days of hospitalization. About 20 years previously he had clinical and roentgenographic evidence of a duodenal ulcer, treated without exacerbation with a "modified" bland diet. He had

eaten shrimp, crabmeat and lobster without difficulty in the past, but had evidently not eaten rock lobster.

Physical examination revealed a 5 foot 10 inch, 174 pound man with abdominal distension, who was almost constantly vomiting small amounts of green watery fluid. His abdomen was tympanitic, but contained no recognizable fluid. No masses were palpable and there was no tenderness.

Admission laboratory data included a hemoglobin of 17.2 gm. per cent, hematocrit 50 per cent, WBC 22,400 with 47 per cent neutrophils, 10 per cent lymphocytes, 3 per cent monocytes and 40 per cent eosinophils. Routine urine analysis was unremarkable.

Admission flat and upright roentgenograms of the abdomen (*Figure 1*) revealed considerable fluid in the stomach, small amounts of gas in the caecum, right colon and transverse colon to the splenic flexure and multiple air-fluid levels in both the small and large intestines. Barium enema was unremarkable.

A Cantor tube was introduced into the stomach and 1,790 ml. of watery green fluid removed, with considerable improvement of his distension. He was maintained on gastric suction and intravenous fluids until March 7, 1966, when an exploratory laparotomy was performed.

At surgery there were 12 to 50 cm., sharply demarcated, segments of small bowel that had a thickened, somewhat rigid wall, and were very distended (*Figure 2*). These began at the ligament of Treitz and in the upper jejunum, involved over half of the bowel. They became progressively less frequent in the lower jejunum and upper ileum, and the distal ileum was essentially unremarkable. The involved serosa was gray-yellow, and the corresponding segments of mesentery boggy and edematous. Intervening bowel segments were slightly distended, but otherwise normal. The colon was not involved and the stomach not examined. Biopsy of an involved region was reported as "inflammatory" on frozen section by the pathologist and the abdomen was closed with drainage.

Histologic examination of the biopsy specimen showed an intact mucosa containing few eosinophils. There was moderate submucosal edema, with a few accompanying eosinophils. The entire muscularis contained dense aggregates of eosinophils which lay between and separated adjacent muscle bundles. Beneath the serosa were dense aggregates of eosinophils.

Postoperatively he received 150 mg. cortisone (as Solu Cortef) on March 7; 75 mg. on March 8; 50 mg. on March 9; 25 mg. on March 10 and 50 mg. together with 60 U of ACTH (as ACTHAR gel) from March 11 through March 16. On March 17 he had 40 U of ACTH and on March 18, 30 U of ACTH and 25 mg. of cortisone. He was discharged on March 18 after an uneventful convalescence. On March 8 his WBC was 11,900 with two per cent eosinophils,

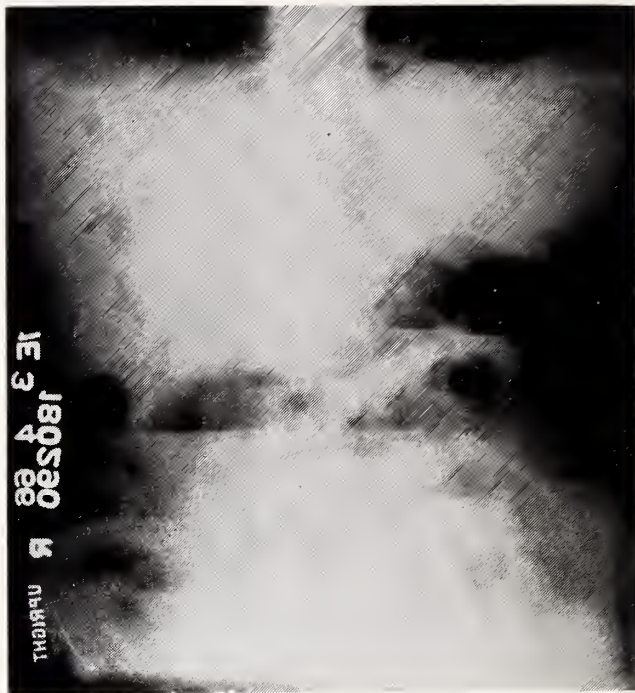
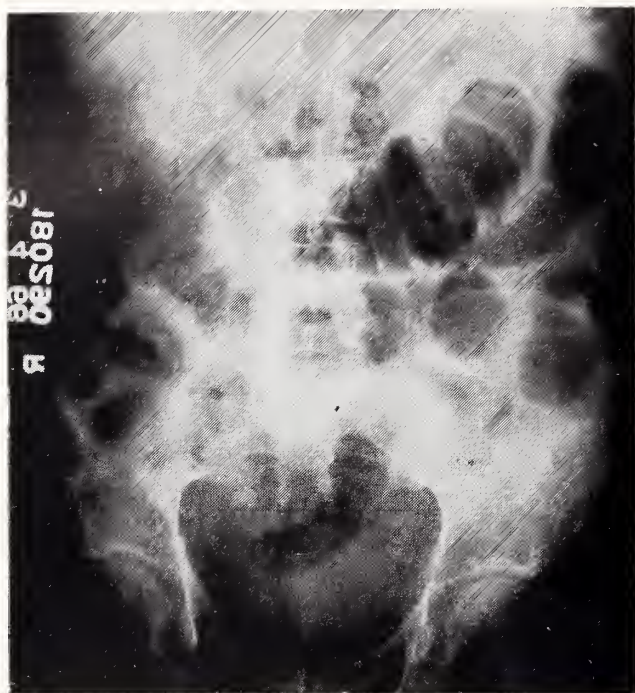


Figure 1. Supine and upright roentgenograms of the abdomen. There is marked stomach and small bowel dilatation with many fluid levels.

and on March 14, 8,100 with one per cent eosinophils.

Discussion

Correct diagnosis of eosinophilic gastroenteritis is important because optimal therapy is conservative. The polypoid lesions are not precancerous and do not recur after removal, making wide resection unnecessary. The diffuse type is characterized by spontaneous remissions and exacerbations and prompt improvement follows cortisone or ACTH therapy. If surgery is required for definite diagnosis, biopsy is sufficient. A frozen section will establish the inflammatory nature of the lesion. If done for obstruction a simple gastroenterostomy should be performed. In one reported case¹² a total gastrectomy was accomplished in spite of a negative frozen section because of the gross impression of linitis plastica. Numerous other patients have had subtotal gastrectomies because the condition was not recognized. It is our opinion that this operation is necessary only for control of hemorrhage.

Despite the presence of large numbers of eosinophils in both types of lesions, we believe that they are not related. This conclusion is based on the following clinical and morphologic considerations:

1. A history of allergy and peripheral eosinophilia is rare in polypoid lesions. Half of patients with the diffuse type, in contrast, have an allergic history and virtually all have striking eosinophilia.

2. The outstanding feature of the polyps are the fibrous and vascular elements. Eosinophils are sometimes few. In the diffuse lesions the eosinophils predominate. Fibrous tissue and vascular channels are

rare and not the cause of the thickening and induration observed.

The pathogenesis of these lesions is unknown. The absence of peripheral eosinophilia and an allergic history in the polypoid group has caused attention to be focused on local inciting agents. It is interesting that Sherman and Moran¹³ have produced inflammatory granulomata by injection of gastric juice into the stomach wall of rabbits. Regardless of etiology, the polyp is enlarged by the mechanical action of food and peristaltic action. Most authors consider the diffuse type a hypersensitivity reaction, although the reason for selection of the gut as target organ is un-



Figure 2. A photograph taken at laparotomy showing a distended, sharply demarcated segment of involved small intestine. Note the contrast with the congested, but otherwise normal, bowel on the left side of the picture.

known. The relationship to a particular allergen is difficult to establish, and well documented correlation with ingestion of a specific food or drug is uncommon.

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TEXT ON DRUG ABUSE AVAILABLE

The first comprehensive text to help teachers understand and combat the problem of drug abuse among students is now available.

It is *Drug Abuse: Escape to Nowhere—A Guide for Educators* published by Smith Kline & French Laboratories, in cooperation with the American Association for Health, Physical Education, and Recreation, a department of the National Education Association. NEA is the nation's largest professional teachers organization.

"The purpose of the book is to help teachers by filling the information vacuum about drug abuse," said F. Markoe Rivinus, President of Smith Kline & French. "Its preparation demonstrates how a business firm and a professional association can work together to attack a problem that concerns them both."

Dr. William G. Carr, executive secretary of NEA, called the guide "a timely and significant aid to educators in combating a serious threat to the youth of our nation." Commenting further, Dr. Carr said, "young people need to understand the dangers of mis-

using drugs and they need informed and sympathetic adults who can help them understand the problems involved. This new book combines factual information with sensible suggestions for working with students at the elementary, high school and college levels. I commend its usefulness to teachers, counselors, and administrators, as well as to parents."

Drug Abuse: Escape to Nowhere presents an historical look at drug abuse and has descriptions of drugs and non-drug products susceptible to abuse. The drug abuser is discussed, as are methods of therapy, educational approaches, problems of abuser identification, identification of drugs, what to do when drug abuse is suspected and procedures for drug abuse prevention.

The 104-page illustrated text can be obtained from the National Education Association, 1201 Sixteenth Street, N. W., Washington, D. C. 20036. It is available at \$2.00 a copy.

RHEUMATIC FEVER

Rheumatic fever accounts for much of the heart disease found in children and young adults, says *Today's Health Guide*, the American Medical Association's book of health information for the American family.

Rheumatic fever usually occurs between the ages of 5 and 15, although adults can have it. It may affect any part of the body temporarily, but damage to the heart, which can be long lasting, is the greatest danger.

Rheumatic heart disease results from the scarring of the heart muscle and valves by rheumatic fever. This may interfere with the vital work of the heart. Many patients recover without permanent injury to the heart valves, but the disease has a way of repeating itself and each attack renews the chances of heart damage.

Rheumatic fever is preceded by a streptococcal infection such as strep sore throat, scarlet fever or a strep ear infection. It can be prevented by treating the strep infection promptly and thoroughly with antibiotics. Because persons who have had rheumatic fever are susceptible rather than immune to repeat attacks, long-term preventive treatment is often prescribed for them. Regular doses of penicillin, under the direction of a physician, can prevent further strep infections and thus ward off subsequent attacks of rheumatic fever.

You can protect your child against rheumatic fever by consulting your doctor if the child develops a sudden, severe sore throat, or if he has been exposed to someone with scarlet fever or another strep infection. —*AMA Health and Safety Tips.*

Tuberculosis Today

Diagnosis and Preventive Treatment of Tuberculosis in Children

ROBERT J. CAPEHART, M.D.,* *Topeka*

MANY PERSONS BELIEVE that tuberculosis is not a problem. In the past much effort has been expended in case finding; this has resulted in a decrease of the incidence of the disease. However, in Kansas it appears that traditional case finding techniques are reaching a point of diminishing returns. Therefore it is appropriate to consider eradication by case prevention.

This is done by identification of persons at risk through:

1. Tuberculin testing of children entering school and examination of the reactors' associates, and
2. Examination of school teachers and employees.

The objective is to prevent the spread of tuberculosis and tuberculous infection to our youngest generation.

This work involves tuberculin testing school enterers and ninth graders, identifying the reactors, seeking out their family or playmate associates who may also be tuberculin reactors, and pressing on until the person who is the source of their infection is discovered and brought to proper therapy. Also, all school teachers and employees are to be tuberculin tested to determine their infection potential so that they may be placed under careful and continuing surveillance for as long as they are associated with the children.

The primary purpose of this child-centered program is not case finding, but rather case prevention. Tuberculin testing by itself is valueless. The value of the tuberculin test is realized when the reactors found in this child-centered program receive continuing long-term follow-up. The similarity to case finding is purely coincidental. The final success of the child-centered program is not in the number of cases found but in the increasing number of children who are kept healthy.

The effectiveness of isoniazid in preventing the complications of primary tuberculosis in children has

been well documented. Preventive treatment of tuberculosis can be defined as an attempt to reduce the risk of the development of active disease in persons infected with tubercle bacilli by the administration of specific antituberculosis drugs.

Why Only School Enterers and Ninth Graders?

Selecting the school enterer to be skin tested for tuberculosis may seem naive, especially when one recalls that these children are entering the so-called "safe years" between 7 and 13, when the incidence

The primary purpose of this child-centered tuberculin testing program is not case finding, but rather case prevention. The objective is to prevent the spread of tuberculosis and tuberculous infection to our youngest generation by identification of persons at risk through tuberculin testing of children entering school and examination of the reactors' associates, and examination of school teachers and employees.

of disease is lowest. But there are several reasons why the school enterer is an astute choice. Children up to this age have lived in a very limited world. The number of intimate contacts is not momentous. Therefore the job of seeking out the source of their infection is not an overwhelming job. This source must be found. Since children live in a children's world this source of infection is possibly exposing or has exposed other children to tubercle bacillus. If younger children below the age of two have been infected they are at very great risk not only of developing the disease but at an age when risk of death is extremely high.

The ninth graders should be skin tested because they are entering a period of stress resulting from the endocrine alterations of puberty. It is well docu-

* Tuberculosis Consultant, Kansas State Board of Health, Topeka.

mented that the incidence of tuberculosis is much higher in this age group than at any other time of a school child's life.

Let us shift our attention to the adult members of the school environment. These adults could affect the program considerably. It is a demonstrated fact that a teacher with active communicable tuberculosis, teaching the same children hour after hour in a closed classroom presents the ideal circumstances for spreading infection to the students. In varying degrees, the same threat is posed by all other tuberculous school employees that have close contact with children. Therefore, the continued testing and surveillance of teacher and school employees must be an integral part of the child-centered program.

The above testing program must be done yearly, for a new population enters school and puberty each year.

We might ask ourselves, why not test the whole school population? This question arises since our school population is relatively small compared to most states. The reason this is not feasible is lack of sufficient personnel and funds to do all grade testing and follow-up yearly.

How the Program Operates

The program starts with the tuberculin testing of school enterers, ninth graders, transfer students and all teachers and school employees. The adult reactors will be referred for x-rays; those with suspicious x-ray findings will need a more extensive workup for definitive diagnosis. If tuberculosis is confirmed they need to be placed under treatment. If x-rays are negative, they should have yearly chest x-rays as long as they work with children.

When a child exhibits a positive skin test he will need to be x-rayed and evaluated by a physician to ascertain that he indeed does not have active tuberculosis. His family and associates will be asked to submit to skin testing and x-ray examination when indicated.

Whenever a case of tuberculosis is discovered, that case, of course, should be treated. If a case is found in a family, the whole family should be put on prophylaxis for a year and placed under continuing supervision. At the end of the year recommendations should be made for periodic re-examination according to each individual's risk status—that is, according to his tuberculin reaction, x-ray findings, age, sex, and other pertinent medical factors.

When tuberculosis is not diagnosed, but a significantly positive skin test is found in the child, he or she should be placed on INH, 5-10 mg/kg/day, for at least 12 months. This drug will be supplied without charge, when requested by the patient's physician, by the State Department of Health.

Treatment of Hypotension

(Continued from Page 221)

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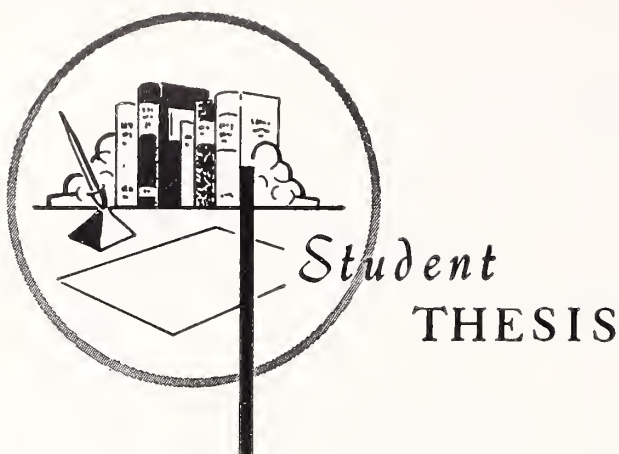
ANNOUNCING . . .

the availability of the tenth guide in the series, "Guides to the Evaluation of Permanent Impairment" developed by the Committee on Rating of Mental and Physical Impairment. It is entitled:

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A limited number of copies of this guide may be obtained, without charge, upon written request to the Committee on Rating of Mental and Physical Impairment, 535 North Dearborn Street, Chicago, Illinois 60610.



Kidney Transplantation

Mark Johnston, M.D., Los Angeles*

SINCE THE ADVENT of modern medicine, man has endeavored to extend life in various and sundry ways. Early attempts to attain this goal in the field of transplantation of one organ or part of an organ to another person evolved the realization of the mechanism of rejection of donor material by the recipient, namely the fact that the rejection was set in motion and directed by immunological mechanisms. Most of the progress in the field of transplantation has been through the greater understanding of this immunological response and what can be done to modify it. In this paper an examination of the known figures regarding only one aspect of tissue transplantation will be presented—that involving the transplantation of the kidney. The review of the literature concerning the figures presented was concluded by September of 1964. The rapidity of events in this field, associated with the importance of this work, has led to much confusion about the true state of renal transplantation. An examination of the world's literature regarding this will be presented and evaluated.

Terminology

The field has been moving at such a rapid rate that most individuals outside the specific area of

transplantation are somewhat confused by the terminology. This confusion is augmented by the fact that presently there is a move to change the old terminology in such a way as to make each word more meaningful and less confusing to the neophyte. The following table reviews the old terms, new terms, new adjectives and their definitions. This paper will employ the new terms, except in instances of quotes in which the old terms will be used.

TABLE 1

<i>Old Terms</i>	<i>New Terms</i>	<i>New Adjectives</i>	<i>Definitions</i>
Autograft	Autograft	Autologous	Graft in which donor is also recipient.
Isograft	Isograft	Isogeneic	Graft between individuals identical in histocompatible antigens.
Homograft	Allograft	Allogeneic	Graft between genetically dissimilar members of the same species.
Heterograft	Xenograft	Xenogeneic	Graft between species.

* This is one of a group of theses written by fourth year students at the University of Kansas School of Medicine, selected for publication by the Editorial Board from a group judged to be the best by the faculty at the school. Dr. Johnston is now a resident at the Los Angeles County General Hospital, Unit I, Los Angeles, California.

In some surgical instances, two other words are frequently encountered and should be defined. They relate to the position of the donor organ in the host. An orthotopic graft is a graft, of any genetic origin, that is placed in the usual anatomic position, whereas, heterotopic grafts are those in unnatural recipient locations.

Origin and Early Work

In the area of organ transplantation, except for the skin, the most well studied is transplantation of the kidney. The first known case of human transplantation with anastomosis of blood vessels was reported by Ullman in 1902, but he was unable to complete the operation. In 1905 Carrel and Guthrie demonstrated in dogs that autotransplantation was possible. In 1906 Jaboulay reported two cases of heterotransplantation involving the human as a recipient. In one patient a pig's kidney was used and in the other patient he used the kidney from a goat. The renal artery and vein were anastomosed to the brachial vessels. In both cases the kidneys became necrotic in about three days and were removed. Unger in 1910 again attempted renal transplantation in the human using an ape's kidney in a patient with advanced nephritis. He used the femoral vessels as an anastomotic site. No urine was produced and the patient died 33 hours later. Schonstadt in 1913 attempted this again with a monkey kidney with equally poor results. In 1923 Neuhof also reported heterotransplantation in the human and the kidney put out a small quantity of blood-tinged urine for approximately six days. This was the first substantial evidence that a heterograft did not necessarily become gangrenous and that thrombosis at the anastomosis was not inevitable. Initially, kidney transplantation consisted only of placing the organ, or parts thereof, in the body, following the progress by mere observation. Following the demise of the host, rarely was there any examination, either histologically or grossly, of the transplant material. With the further understanding of the process of immunology and its possible application in this area, workers began to incorporate some of these observations in their clinical problems. Most of the early work, except in the area of genetically identical, or nearly identical, donor-host cases did not give any indication that it was possible to increase survival time to any significant degree. The kidney was selected for transplantation because it is technically the most available of the various organs as one is dealing only with a simple vascular pedicle. It is also applicable because it is a bilaterally symmetrical structure and its function can readily and constantly be measured. Studies with renal transplantation in the canine led earlier observers to the conclusion that the reaction was quite

severe in nature; however, it has been found that renal rejection in the dog is much more violent than the renal rejection in man. Early renal transplants in man were done with no immunosuppressive therapy, and as one might expect, the results were less than desirable. However, it is of interest that several instances of prolongation of survival of a graft were observed, even with the use of cadaver material. Perhaps the most significant fact to come from this work was a definite prolonged survival of grafts involving monozygotic twins. The impetus of study of renal transplantation has been augmented in recent years by the application of immunosuppressive techniques, the rational deriving from observations of the immunologic mechanisms and their etiology. While one cannot term the problem of renal transplantation solved, neither is it possible to say that the problems which exist are insurmountable.

Immunological Studies

Studies in this field brought forth many interesting phenomena, some of which are not at this time completely understood. It was noted that there appeared to be in the body certain areas which were "privileged," i.e., these areas would support a graft for a much longer period of time than other areas. Work done with regard to the anterior chamber of the eye, the testis, and the cheek pouch of the Syrian Hamster have been the areas most thoroughly investigated. Further studies brought forth the fact that there was the accumulation of a specific type of cell in the area of the graft forming, in the skin graft, the phenomenon of the "Black Band." These lymphoid cells have been studied extensively in an effort to ascertain more clearly their role in this process. Work by Lawrence and Boyden led to the realization that the allograft sensitivity mechanism was probably a cell-bound antibody which was produced by exposure to donor antigen (or protein). It would appear from the most recent work that these antibodies are attached to the external cell membrane, internal membranous components of various cell organelles—more specifically, in a lipoprotein (or glycoprotein) complex that is an integral part of the cell membrane and may, in fact, be ribonucleic acid with self-replicating activity. Further work has been done with such things as the millipore chamber—a ring-shaped plastic apparatus to which a cellulose membrane is attached on both sides giving a drum-like appearance. Cells are then injected into the center and sealed in with paraffin. The membrane allows passage of serum from the chamber but retains the cells. The use of this mechanism seems to indicate that cells need to be present for rejection to occur. Armed with this information, the work in transplantation has centered, to a great degree, in two areas—that of trying to alter the re-

recipient activity, and to working out tests which will give an indication of the genetic make-up of the individual in order to find the most histocompatible donor for the recipient. Work in the former has been directed along several lines, such as ablation of lymphoid tissue through the use of anti-lymphocyte serum and surgery; immunologic tolerance, the specific state of unresponsiveness to an antigen in adult life as a consequence of exposure to the antigen "in utero" or in the neonatal period; enhancement, or the successful establishment, or delayed rejection of an allograft as a consequence of the presence of specific antiserum in the host. With enhancement, the best results have come from killed tissue as the initial immunizing material, as this does not evoke a cellular response. Also of extreme importance in this area is the use of thymectomy, chemotherapeutics, and radiation therapy.

Work in the area of histocompatibility has been done primarily on the mouse. At least 15 loci have been extensively studied. These studies have led to the realization that the loci vary in strength in the mouse and that this same process is probably also present in man. These loci determine not only the strongest transplantation antigens but also the cellular antigens that elicit the production of humoral antibodies detectable as hemagglutinins, hemolysins and cytotoxins. Realization of the fact that the rejection mechanism had an immunological basis discouraged work in this area for a considerable time. Interest was again revived by work in the early 1950's on dogs by Dempster, Murray and Holden, Baker and Gordon, and Persky and Jacobs with the use of x-ray treatment, cortisone, ACTH and nitrogen mustard. They were able to show that breaking the immunological barrier was possible and that at least some degree of prolongation of a graft could be achieved. Following this work were experiments by Hume and others on lymphatic isolation, cross-circulation, effects of pregnancy and others. Hume and others also noted that the survival rate was prolonged in man more easily than in the dog and that the human transplants were always placed in uremic hosts and after variable periods of ischemia. Studies in this area seem to indicate a prolonged survival rate associated with uremia. As early as 1924 Avramovici had studied the effects of hypothermia and transplantation. Research in this area indicated that cooling of the renal transplant does permit a longer period of ischemia. However, if the cooling is longer than approximately three hours, rather severe renal damage is likely to occur.

Therapy

Of the methods presently employed in the process of immunosuppressive therapy, that of chemotherapeutics seems to be the most fruitful. In general, there have been four different groups of drugs used—

the steroids, antimetabolites, alkylating agents, and the antibiotics. The beneficial effects of steroids may evolve from two areas. It may be due either to the effect on histocytic activity leading to failure of antigen liberation from the graft and its subsequent transportation to immune centers, or to its "anti-inflammatory" response. The antimetabolites such as 6-mercaptopurine work by competing with hypoxanthine and adenine for their natural receptors and probably interfere with numerous complex biochemical reactions, among which is the inhibition of nucleic acid synthesis. The antibiotics are active in the area of interference with the synthesis of protein, more specifically by inhibition of functioning of messenger RNA by preventing its attachment to ribosomes or blocking the function of messenger RNA formed in response to the antigenic stimulus. Probably the most common chemotherapeutic agents presently in use are azathioprine, an imidazolyl conjugate of 6-mercaptopurine, azaserine and actinomycin C. The advent of this mode of therapy has greatly improved the outlook with regard to transplantation in general and especially renal transplantation. Total body irradiation therapy was evaluated in the 1950's but the treatment so injured the patient (marrow depression, agranulocytosis and overwhelming infection) that it was discarded. More recently investigators have been using local irradiation primarily for treatment of a rejection crisis. The amount usually given is 150 R to the transplant site daily for three to four days. This treatment is given along with the drug therapy.

The surgical aspect of renal transplantation deals both with the donor and the recipient. The donor nephrectomy may follow many patterns, of which two will be mentioned. In all techniques, it is vastly important that the kidney not be traumatized any more than is possible, that it does not remain ischemic for prolonged periods, that the vascular supply to the ureters remain intact and that as much of the renal artery and vein be removed as is possible. In one technique, if the same ABO blood group is being used, total body hypothermia (30-32° C) is used. Five minutes prior to nephrectomy 2 mgm/kgm of heparin is given intravenously. Following removal of the specimen, protamine sulfate 2 mgm/kgm is given in 100 cc. five per cent dextrose in water in ten minutes. If there is an ABO incompatibility the nephrectomy is done at body temperature and following removal of the kidney it is perfused with lactated ringers solution or ten per cent saline (precooled to 15° C), each liter of which contains 50 mgm. of heparin and one gram of procaine chloride. Perfusion with a precooled solution is necessary as the interval of survival under ischemic conditions may be extended by this method. Generally, the opposite iliac fossa is the site of the renal transplant as this allows it to rest in such a

position in which the vessels do not cross upon themselves.

The recipient operation generally consists of bilateral nephrectomy and usually splenectomy. Thymectomy may also be done at this time or may be done as much as three months prior to transplantation. Because of the danger of infection with immunosuppressive therapy, especially since the bladder is opened, particular care is taken in this area. The bladder is infused with 50 cc. of saline with one gram of neomycin and 50,000 units of bacitracin which is allowed to drain just prior to ureterocystostomy. The iliac fossa is presently the most frequent site of anastomosis. The renal vein is anastomosed side to end with the iliac vein and the renal artery is anastomosed to the hypogastric artery. The ureter is then placed in the host's bladder and the kidney is secured in the fossa.

Experience has shown that better results may be obtained if the operative procedure is done as a single step. Aside from the fact that the patient can tolerate one operation more easily, there are several other reasons for endeavoring to follow this course of action. If the nephrectomy is done first the patient's metabolic disorder, which is secondary to renal failure, will only be further augmented. If the host's kidneys remain, several problems may evolve. The transplanted kidney may develop "transplant disease" or the same disease as that of the host's kidneys. There may be a hypertensive state secondary to the host's injured kidneys which will damage the donor kidney if the host's kidneys remain. The transplant cannot be evaluated properly by laboratory procedures in the presence of the host's kidneys, thus decreasing the opportunity of early detection of the onset of rejection.

Requirements for Donor Selection

The selection of patients for renal transplantation also implies the selection of donors. Research has shown that it is of paramount importance to understand the genetic composition of both the donor and recipient, since the best results in a series of patients will come from those donor-host relationships which have the greatest amount of histocompatibility. In order to determine which donor is best for a particular host, several methods of typing have been devised. In devising a histocompatibility test it behooves one to keep in mind that the rejection is much more severe and rapid once the host has been exposed to the donor antigen and, in the reverse, once the donor has been exposed to the host. The general requirements for a good histocompatibility test should meet the following: (1) Exclude organs (from donors) that would elicit particularly violent reactions; (2) select individuals whose tissues would be tolerated

for the longest time; (3) the test should not lead to sensitization of future recipients; (4) be quick to execute and have a high degree of discrimination; (5) must not be subject to disqualification because patient is uremic or otherwise debilitated; and, (6) should be applicable to cadaver donors. The tests which are used today do not meet all of these requirements but they are of definite value in determining which of the donors would be worst even if they cannot predict which would be the best. One of the more popular tests was described by Wilson, Henry, and Merrill. It is based on the observed behavior of skin grafts which were transplanted from the recipient to a third person and 15 days later a skin graft from the donor is also transplanted. The rate of rejection of the donor graft gives an indication of the degree of antigen-sharing between the grafts. If there is a rapid rejection of the graft or the graft is rejected prior to revascularization (white graft) this implies a high degree of antigenic similarity. The converse of this—a slow rejection—would indicate that few antigens are shared as the third person has not developed specific antibodies to it because of the presence of the recipient graft. Unfortunately, as mentioned above, this test shows only similarities, not dissimilarities. Experiments by Rapaport and associates have shown this to be true.

Brent and Medawar described a test using guinea pigs in which lymphocytes from potential recipient guinea pigs were injected intradermally into several guinea pigs which were later used as skin graft donors. It was found that the intensity of the cutaneous reaction correlated directly with the order of breakdown of skin grafts after subsequent transplantation. The animal showing the weakest cutaneous reaction was the donor of choice. This scheme permitted some classification of donors based on the severity of the reaction of the immunological mechanism of the recipient and it does not sensitize the host. Humberger and associates also devised a test in which leukocytes from a donor and host are typed according to a reaction in leukoagglutinating sera obtained from large numbers of hyperimmune subjects.

Host Selection

The selection of hosts for transplantation is indicated by the following circumstances. The host should have irreversible terminal disease, a normal lower urinary tract, a minimal or controlled infection, and an inactive primary renal disease. The host should also be made aware of the fact that he is about to undergo a process which in the end may leave him no better off than before. Most reports would indicate that patients rarely refuse this opportunity.

Treatment

It was not until the use of antimetabolites and the antibiotics had become vogue that the feeling that renal allografting was a real possibility instead of a dream. Most of the good results in renal allografting have been so recent that it makes it difficult to properly evaluate the whole of the field and where it stands today.

Work with such alkylating agents as nitrogen mustard and the ethylene amines did not show any prolongation or survival time. With the advent of the use of such drugs as 6-mercaptopurine and methotrexate the whole complexion of the situation changed and the renal transplantation seemed to have reached a new era. As was mentioned earlier, the newest drugs in use presently are azothioprine (Imuran), azaserine, and actinomycin C and the survival rates with the use of these drugs is an indication of their potentialities. The following is a current protocol of drug dosage presently used by one of the major researchers in the field, J. E. Murray.

Azothioprine—2-4 mg/kg P.O. daily.

Azaserine—0.5 to 1.0 mg/kg IV daily for 21 days.

Actinomycin C—6 mg/kg at first indication of rejection.

Prednisone—60-80 mg P.O. with failure of actinomycin C, then 15 mg. thereafter in a tapered dosage.

Another major researcher in this area, Starzl, uses the following regimen: Azothioprine 1.5-4 mg/kg/day starting eight to ten days pre-operation. The dosage following surgery is directly related to the white blood cell count, and is administered in amounts which are just below the level that would cause a leukopenia. Twenty-four to 72 hours prior to operation, a course of 3-5 mg/kg/day of Prednisone (divided into a dose every six hours) is instituted. Fifteen to 30 minutes prior to revascularization of the allograft an additional IV infusion of 50 mg of prednisolone is given. Postoperatively, the steroids are decreased every five to ten days to a 40-60 mg/day level at one month following operation, and are then slowly reduced to a maintenance level. Local irradiation and intravenous actinomycin C are given if rejection is suspected. The importance of continuous use of Imuran is stressed.

Rejection

Renal rejection in its pure form is not seen now and most of the information comes from observations in the dog. Clinically, following transplantation, there is the almost immediate onset of urinary excretion which is followed in three to six days by oliguria, anuria, proteinuria, and progressive azotemia. With-

out treatment by this stage, resumption of renal function does not occur. In man this process is much slower because of species differences in the vigor of host immunological activation or to a suppression of the recipient antibody mechanism secondary to chronic uremia. In man the allograft excretes urine within 90 minutes post-revascularization. The uremia is alleviated with loss of excess body fluid and a definite feeling of well being. However, 80 to 90 per cent will have the abrupt onset of secondary illness even with treatment. This usually takes place on about the 13th day. With the onset of rejection the first phenomenon is usually sudden and extreme hyperpyrexia. Associated with this is a fall in urinary output, urinary sodium and urinary chloride. The BUN tends to rise, the creatinine clearance falls and there are increased cells in the sediment. The kidney becomes tender and enlarged and there is the development of renogram abnormalities. Biopsy of the kidney will reveal pathological changes described below.

Examination of the kidney at this stage would reveal the classic focal and diffuse mononuclear cell invasion. There would also be vascular lesions, first described by Dempster and Simonsen, which are characterized by the presence of edema in and between the layers of the vessel wall with the deposition of eosinophilic fibrinoid material. There is also endothelial proliferation and the infiltration of pyroninophilic mononuclear cells. Some experimenters feel that experiments with the millipore chamber indicate that the vascular changes are related to a humoral antibody response.

Registry

Renal transplantation statistics, taken as a whole, do not do justice to the slow, but steady, progress which has been made since the advent of the twentieth century. It is a well known fact that statistics may be used to the advantage or disadvantage of any particular series. It is the purpose of this paper to present the statistics in two different ways in an effort to clarify the position of renal transplantation as it is today and to obtain an idea of its rate of progress. The overall statistics of renal transplantation shall be presented and then broken down as well as possible into three successive periods which may be designated as pre- and early treatment period, intermediate period and the present period.

The figures used in the following tables are derived primarily from the transplantation proceedings of the Registry of Human Kidney Transplantation. The Kidney Transplant Registry was set up primarily by J. E. Murray, M.D., of the Peter Bent Brigham Hospital, Boston, Massachusetts, and the data has been published in the January, July and September, 1964 issues of *Transplantation*. The Registry has contacted all

known Kidney Transplant groups and all have submitted the requested information. All the information is transcribed onto data processing cards and are considered the common property of everyone who has participated in the Registry. Anyone seeking this information may obtain it by writing and requesting it from J. E. Murray, M.D. Presently there are 33 participating groups.

Analysis of Results

Table 2 shows the duration of function of the total number of transplants to March of 1964. At the bottom of the graft, the percentage figures indicate the survival for each time period. Even a cursory examination of these figures would indicate that if the host is able to survive past the first month of renal allografting, his chances of continued renal function are greatly improved. The high fatality rate in the first month is probably due to several factors such as faulty technique, exceptionally poor condition of the host and severe histocompatibility differences. These figures become even more significant when one realizes that as the total number of survivors decreases, as it does with time, then each subsequent death will tend to lessen the survival percentage more drastically. If we take the results of Table 3 which shows the cases between March and September of 1964, and examine the figures in this period in regard to the one month survival percentage of cases, we see that the results are much improved over that of those figures in Table 2. Comparison of the six-month survival rates also shows

significant improvement. We would certainly expect, from past experiences, that the most severe problems would evidence themselves early, easily within the first month. Comparison of Tables 2 and 3 indicate the degree of acceleration of the rate of progress made in the last year.

Table 4 shows the percentage of each donor group living as of September 15, 1964. This table enables us to see which donor groups have the greatest chance of matching with the host. Some of the figures are obviously not to be taken at face value because of the small number of transplants in which the group was the donor source. Generally, it may be seen that the monozygotic and dizygotic twins group has the highest percentage alive while the free kidney group has the lowest. This is in line with the present theory of the immunologic mechanism. We may also get an indication of what it is that keeps the total over-all rate at 40 per cent. If we omit the living unrelated volunteer group, the free kidney group and the cadaver group from this list, then the over-all survival rate becomes 60.7 per cent—a very respectable figure. Except for the cadaver group, this does by no means exclude the *great* majority of transplants. Table 5 shows the total number of transplants performed to September, 1964, but has them divided into three different periods of time. Prior to 1962 most of the drug therapy consisted of nitrogen mustard, ethylene amines and some early use of 6-mercaptopurine. During the 1962-1964 period most of the present day drugs were in use but dosage schedules were not

TABLE 2
DURATION OF TRANSPLANT FUNCTION
RELATED TO DONOR SOURCE TO 9-15-63

Donor	Total Number	Number Alive	Number Dead	Months Lived			
				0-1	1-6	6-12	12
Mother	33	18	15	2/9	9/4	6/1	1/1
Father	16	6	10	0/10	3/0	1/0	2/0
Sibs	39	18	21	0/12	10/9	7/0	1/0
Other blood relatives	3	2	1	1/	0/1	/	1/0
Living unrelated volunteers	22	6	16	0/8	5/7	1/	0/1
Living unrelated non-volunteers ..	30	7	23	4/18	3/4	/	0/1
Cadavers	68	10	58	2/40	4/18	3/0	1/0
Dizygotic twins	5	4	1	0/1	2/0	/	2/0
Monozygotic twins .	28	21	7	0/2	2/1	1/1	18/3
Total	244	92	152	9/100	38/44	19/2	26/6
Alive/dead				8%	46%	90%	81%

Survival = 38%

TABLE 3
MONTHS OF SURVIVAL—3-16-64 TO 9-15-64

Donor	Total Cases	Number Alive	Number Dead	Months Survived Post Transplant	
				0-1	1-6
Mother	32	19	13	3/7	16/6
Father	7	7	0	1/0	6/0
Sister	7	6	1	1/0	5/1
Brother	9	5	4	0/3	5/1
Other blood relatives	1	1	0		1/0
Spouse	2	0	2	0/1	0/1
Living unrelated volunteers	4	1	3	0/2	1/1
Free kidney.....	5	0	5	0/2	0/3
Cadaver	41	22	19	8/14	14/5
Monozygotic twins	1	1	0	1/0	
Dizygotic twins	2	2	0		2/0
Total	111	64	47	14/29	50/18
Alive/dead		Percentage		32%	73%

entirely worked out. The 1964 period shows, to a degree, the effect that the new drugs are having in this area. One may see from observation of the table that as knowledge of genetic compatability and ways to determine them grew, there was a shift in the selection of donors. Even though cadaver organ transplants have remained a significant percentage of the total number of donors for obvious reasons, it becomes apparent that there has been a greater use of donors who have a higher chance of being more histocompatible with the host. The total over-all survival is slightly above that seen in Table 2, being 40 per cent.

TABLE 4
TOTAL LIVING AS OF 9-15-64

Donor	Total Number	Number Living	Percentage
Mother	103	50	48
Father	40	21	52
Sibs	81	47	58
Other blood relatives	8	6	75
Living unrelated volunteers	40	5	12
Cadaver	142	36	25
Dizygotic twins ..	9	6	66
Monozygotic twins	33	22	66
Living unrelated non-volunteers .	39	3	8

TABLE 5
TOTAL REPORTED CASES OF KIDNEY TRANSPLANTATION

Donor	Number	Prior to 3/62	3/62 to 3/64	3/64 to 9/64
Mother	103	6	65 (31)	32 (19)
Father	40	5	28 (14)	7 (7)
Sister	37	4	26 (17)	7 (6)
Brother	44	6 (1)	29 (18)	9 (5)
Other blood relatives ...	8	1 (1)	6 (4)	1 (1)
Spouse	12	4	6 (1)	2 (0)
Living unrelated volunteer ..	28	4	20 (3)	4 (1)
Free kidney ...	39	16	18 (3)	5 (0)
Cadaver	142	24	77 (14)	41 (22)
Monozygotic twins	33	22 (14)	10 (7)	1 (1)
Dizygotic twins	9	2 (2)	5 (2)	2 (2)
Total	495	94 (18)	290 (114)	111 (64)
Total survival .	40%	19%	39%	58%

TABLE 6
ANALYSIS OF TRANSPLANTS
FROM 3-16-64 TO 9-15-64 PERIOD

Donor	Total Cases	Number Alive	Duration for Months Post Transplant						
			1	1-2	2-3	3-4	4-5	5-6	
Mother ...	32	19	3	1	3	6	5	1	
Father	7	7	1		1	1	3	1	
Sister	7	6	1			2	1	2	
Brother ...	9	5			1		1	3	
Other blood relatives .	1	1							1
Spouse ...	2	0							
Living unre- lated vol- unteers .	4	1							1
Free kidney	5	0							
Cadaver ..	41	22	8	4	5	3	1	1	
Monozygo- matic twin	1	1	1						
Dizygomatic twin ...	2	2		1			1		
Total	111	64	14	6	10	12	12	10	

Percentage alive at end of 6 months = 58%

TABLE 7
KIDNEY TRANSPLANTS 3-16-64 TO 9-15-64

Donor	Total Number	Total Dead	Died 1st Month
Mother	32	13	7
Father	7	0	0
Sister	7	1	0
Brother	9	4	3
Other blood relatives	1	0	0
Spouse	2	2	1
Living unrelated volunteer	4	3	2
Free kidney	5	5	2
Cadaver	41	19	14
Monozygotic twins ..	1	0	0
Dizygotic twins	2	0	0
Total	111	47	29 (62%)
Total to 3-15-64	374	229	161 (73%)

Discussion

The figures presented above are representative of the results of all reported cases in the world's list of renal allografts. We may make, therefore, the supposition that these figures give us a picture of the present status of kidney transplantation that is as close to the truth as can be expected.

From evaluation of these figures it cannot be denied that there has been a significant advancement in this field, especially since the advent of immunosuppressive therapy. Progress has stemmed from the unification of information from the many disciplines involved in this field and continued progress will parallel the advancement made in each discipline. The technical aspect of transplantation, while still possessing some problems, is probably the most advanced. The use of cadaver material and storage of organs for any period of time has its value only if we are able to conquer the other problems of transplantation.

Drugs presently in use have led to exceptionally good results in suppressing the immediate reaction and this success has added stimulus to the search for more effective drugs which will better control the immunological mechanism and will have fewer toxic side effects.

Perhaps the area which in the future will give the most lasting effect to the overall progress of renal transplantation is that of immunology. The development of methods which will allow us to completely "genetically type" a person will be paramount in "breaking the barrier." The tests referred to above that are presently being used in the selection of donors and hosts are a big step in this direction.

39 cases reported of a survival time of six months or greater. While this six-month survival rate appears to be low for the amount of work that has been expended over the years, its significance becomes more clearly defined when one realizes that less than ten years ago this figure was less than one per cent, and the opinion was strongly held that the immunological barrier was impossible to alter to a degree sufficient to be of benefit. As referred to in Table 2, a significant increase in survival rates might come about through the lowering of the mortality rates in that all too important and critical first month post-transplant. Tables 6 and 7, which show the duration of function in months post-transplant and the percentage dead in the first month respectively, indicates that there is a decrease in the mortality in the 1964 transplant series as compared to the earlier years. The figures in Table 6 show more clearly the rapidity of progress in the field of transplantation. The six-month survival rate for this period of time is 58 per cent, a figure made even more impressive by the small number of "twins" cases done during this time.

Table 8 shows the relationship of transplantation function to the mode of immunosuppressive therapy in a series of renal allografts. The percentage figures would seem to indicate that the combination of drugs and local x-irradiation have a higher survival rate.

TABLE 8
RELATION OF TRANSPLANT FUNCTION TO METHODS OF IMMUNE SUPPRESSION

Mode of Therapy	1 Mo.	1-3 Mo.	3-6 Mo.	6-12 Mo.	12-24 Mo.	24 Mo.	Total	Per Cent
X-ray only	2/20	0/2	0/1	1/1	0/2	/	3/26	11
Drugs only	0/30	11/21	5/10	4/4	1/1	/	21/66	32
Combination drugs and x-ray	1/28	6/14	5/8	6/6	3/4	1/1	22/61	33
Total	3/78	17/37	10/19	11/11	3/7	1/1	46/153	30

Patients alive/all patients living or dead.

Patients with terminal renal failure can no longer be written off by the physician as beyond the limits of practical medicine. The physician must be aware of the advances and changes in this field because he can very well be the instrument to a prolonged life where five years ago life was not thought possible. The decision of renal transplantation rests not only in the hands of the patient who fits into the above outline but it also becomes the responsibility of his physician.

Summary

The progression of renal transplantation has been reviewed since the start of the 20th century. Aware-

ness of the immunologic mechanism as the basis for transplantation rejection stimulated workers to devise means in which to alter the response. With the development of these means and their application, the possibilities of extending life via organ transplantation have also increased. The over-all survival rate to date is approximately 40 per cent. In the 1964 period the six-month survival rate is approximately 58 per cent. Excluding twins, over 39 patients have now lived more than six months. Ten years ago, not one of those persons would have survived as long.

EDITOR'S NOTE: References may be obtained by writing the JOURNAL, 315 West 4th Street, Topeka, Kansas 66603.

PREPARATION OF MANUSCRIPTS FOR THE JOURNAL

Exclusive Publication: Articles are accepted for publication on condition that they are contributed solely to this Journal. Publication elsewhere will be subsequently authorized in the discretion of the Editor.

Correspondence: Address all correspondence relating to publication of scientific papers to the Managing Editor.

Manuscript: Type double spaced, on white paper, 8½ by 11, with one-inch margins at the top, bottom, and right, and 1½ inches on the left. Submit the original. Call drugs by their generic names. The trade names can be added, in parenthesis, if they are considered important. Keep one copy of the paper.

Footnotes and References: Use the style of the *Quarterly Cumulative Index Medicus* published by the American Medical Association, which requires, in the order given: name of author, title of article, name of periodical, with volume, pages, month—day of month if weekly—and year as follows:

4. Doe, J. E., What I Know About It, J. Kans. M. S.
54:717-719 (Dec.) 1954.

Include only those references specifically referred to in the text.

Reprints: An order slip for reprints with a table covering cost will be sent with the galley proof to each contributor.

Illustrations: A reasonable number of illustrations are allowed without cost to the author. Place the name of the author on the back of each illustration, table, etc. Submit clear and distinct, glossy photographs. Make drawings in black ink on white paper. Attach a slip of paper to the bottom of the illustration with the author's name, identification of article, and appropriate legend. Identify the top of the illustration. Photographs and drawings will be returned if so requested.

Under ordinary circumstances articles are scheduled several months in advance. Notice will be given the contributor when the article has been accepted and again before publication.

Society members throughout the state are encouraged to write up their interesting cases and submit them for publication. The editorial staff welcomes the opportunity of helping you prepare your article for the printer.

The President's Message

DEAR DOCTOR:

The goals of our Kansas Medical Society continue to be the improving of the profession, better methods of care for our patients, and resisting creeping socialism. We have made advances on some fronts and suffered reverses on others. We must continue to utilize the thinking and abilities of our many fine members toward these goals.

The Society was fortunate to have James McClure at the helm this year. Seldom has a president brought more know-how and dedication to the office. "Well done, Jim."

As president, I solicit your continued help, and hope that together we can maintain and improve the stature of the Society.



Sincerely,

A handwritten signature in dark ink, appearing to read "Leo H. Sell". The signature is fluid and cursive.

President



AMA Volunteer Physicians for Viet Nam

AMA Volunteer Physicians for Viet Nam is a program for supplying medical care to the civilian population of South Viet Nam through the volunteer services of U. S. physicians.

It is administered by the American Medical Association and financed by the United States Agency for International Development (USAID).

Physicians sent to South Viet Nam under the program serve a 60-day tour of duty at one of 16 provincial civilian hospitals. The volunteer receives only his transportation and an expense allowance of ten dollars a day; otherwise his services are entirely unpaid.

At the hospitals the volunteers will work with teams of military physicians and corpsmen. These teams, assigned to USAID for service in provincial civilian hospitals, provide continuity in the volunteer program.

Twenty-four to 32 physicians are needed every month to keep hospital staffs at full strength. Most needed are general practitioners, internists, general surgeons and orthopedic surgeons. As of June-July, 1966, the greatest demand is for general and orthopedic surgeons to treat war wounded civilians. Small numbers of specialists in the fields of chest diseases, ophthalmology, otolaryngology, radiology and psychiatry are needed from time to time. Other specialists cannot be used at present but inquiries are invited in anticipation of future demands. Because of conditions in Viet Nam only male physicians are accepted. Non-physicians are not recruited.

Information about the program may be obtained by contacting:

AMA Volunteer Physicians for Viet Nam
American Medical Association
535 North Dearborn Street
Chicago, Illinois 60610

The Background

Twenty-five years of war and insurrection in the area now known as South Viet Nam has placed tremendous health burdens on the people. To the ever-present diseases and malnutrition of Southeast Asia have been added war injuries, disruption of whatever public health measures existed, and a serious lack of doctors and nurses as more and more of the country's approximately 1,000 physicians were called into military service. Today only about 350 physicians are left to administer health care to 15 million Vietnamese civilians.

South Vietnamese authorities have asked the United States government to encourage American physicians to volunteer their services to Vietnamese civilians.

Out of this request grew a program financed by the U. S. government through the State Department's Agency for International Development (AID). Created to recruit U. S. physicians for volunteer 60-day tours of service at Vietnamese civilian hospitals, the program was at first administered by People-to-People Health Foundation, Inc., with the American Medical Association assisting in recruitment. At this point the program was called Project Viet-Nam.

After successfully implementing Project Viet-Nam on a pilot basis, People-to-People Foundation asked that the program be turned over to some other responsible agency, preferably the AMA. At the invitation of the Agency for International Development, the AMA assumed administrative responsibility on June 30, 1966, when the contract between the USAID and People-to-People Health Foundation, Inc. terminated. Under the aegis of the AMA, the program is known as AMA Volunteer Physicians for Viet Nam.

The Challenge to the Physician

An American physician faces challenges in Viet

Nam that most U. S. doctors see only in textbooks. Important causes of death in South Viet Nam are malaria, tuberculosis, intestinal parasitism and other intestinal diseases, pneumonia, meningitis, typhoid fever, and a wide range of war wounds caused by mines, booby traps, small arms fire, and air or artillery bombardment. Thousands of civilians need treatment and rehabilitation after war injuries.

Diseases causing disability throughout the population include trachoma (four fifths of the people infected at one time or another), leprosy, bacillary and amebic dysentery, smallpox, and nutritional disorders.

South Viet Nam has about 120 hospitals, of which 101 serve civilians. All are overloaded; at times, two or even three patients have been accommodated in a single bed.

Physicians serving through AMA Volunteer Physicians for Viet Nam are placed in government-operated hospitals in rural areas, where the need is greatest. All are in so-called pacified regions where the Viet Cong do not routinely conduct military operations in the open, although they are presumed to be nearby at all times.

Military teams in the civilian provincial hospitals will each comprise three medical officers, one administrative officer, and twelve enlisted men (corpsmen). Their responsibility will be for the civilian population in the province to which they are assigned.

Recruitment

To be accepted as a volunteer the physician must be in good health and not more than 55 years old. No dependents may accompany the volunteer, even if the dependent is medically qualified.

A passport and visa are required of all volunteers going to Viet Nam, and assistance is given the physician in obtaining them. The volunteer also must have a certificate of vaccination against smallpox and inoculation against cholera, received in the last four to six months. Immunization against plague, typhoid, tetanus, typhus and polio are recommended by the World Health Organization.

Transportation is supplied from the physician's home to Viet Nam and return. A standard baggage allowance of 44 pounds, plus an additional 22 pounds, is permitted.

Housing is provided in Viet Nam in available hotels or apartments. Each volunteer physician receives an expense allowance of ten dollars a day. Expenses connected with passport, visa and immunization are paid by USAID through AMA Volunteer Physicians for Viet Nam. Each volunteer is covered, while in Viet Nam, by a \$50,000 all-risk insurance policy at no expense to himself.

Upon arrival in Saigon the volunteer will be met by the Field Director of AMA Volunteer Physicians for

Viet Nam or an associate, and directed to the proper destination. The Field Director also assists hospital staffs with supply and logistical problems.

According to our information, the following physicians from Kansas have served in this program: Moheb A. S. Hallaba, Winfield; Nels M. Strandjord, Kansas City; Earl C. Hutchins, Wichita; Isle Heilbrun, Prairie Village, and Wayne G. Parker, Oberlin.

ETHICAL RESPONSIBILITIES IN PRESCRIBING DRUGS AND DEVICES

(The following is an opinion of the Judicial Council of the American Medical Association regarding ownership of or interest in drug firms and the ethical responsibilities of prescribing and dispensing drugs or devices. This opinion was adopted by the Judicial Council on March 12, 1967.)

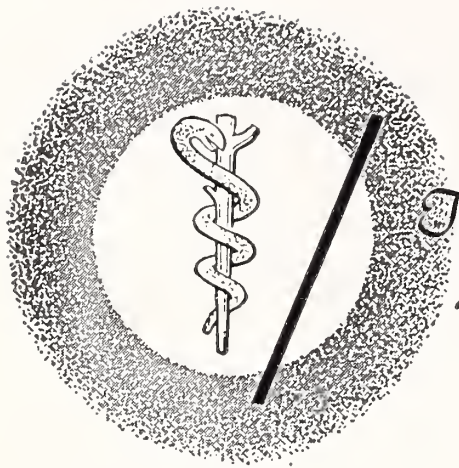
It is unethical for a physician to be influenced in the prescribing of drugs or devices by his direct or indirect financial interest in a pharmaceutical firm or other supplier. It is immaterial whether the firm manufactures or repackages the products involved.

It is unethical for a physician to own stock or have a direct or indirect financial interest in a firm that uses its relationship with physician-stockholders as a means of inducing or influencing them to prescribe the firm's products. Practicing physicians should divest themselves of any financial interest in firms that use this form of sales promotion. Reputable firms rely upon quality and efficacy to sell their products under competitive circumstances, and not upon appeal to physicians with financial involvements which might influence them in their prescribing.

Prescribing for patients involves more than the designation of drugs or devices which are most likely to prove efficacious in the treatment of a patient. The physician has an ethical responsibility to assure that high quality products will be dispensed to his patient. Obviously, the benefits of the physician's skill are diminished if the patient receives drugs or devices of inferior quality.

Inasmuch as the physician should also be mindful of the cost to his patients of drugs or devices he prescribes, he may properly discuss with patients both quality and cost.

Buy U.S.
Savings Bonds



The Kansas Press Looks at Medicine

Editor's Note. In this section the JOURNAL reproduces editorials relating to medicine which have appeared in the lay press. An effort is made to include both favorable and unfavorable comments, and the Editorial Board in no instance assumes responsibility for the opinions expressed.

MARK TWAIN OF PLAIN

Persons who watched the Mark Twain program on TV a few nights ago which drew so much praise may have noted as this writer did the resemblance in wit between old Samuel Clemens, and this area's representative in the state Legislature, Dr. E. F. Steichen of Lenora.

Doc Steichen, as he prefers to be called, has been making quite a reputation for himself as a wit, since beginning his first term as a state representative. A freshman legislator usually doesn't have much to say about what is going on, but Doc Steichen is having his own say, anyway. He has been doing so in such a clever way that many of his friends have dubbed him The Mark Twain of the Plain, or, perhaps, the poor man's Voltaire.

Here are some examples of Steichen's wit which have appeared so far:

According to abstainers, the simplicity of its (the liquor problem's) cure is to eliminate alcohol. In like manner, we can eliminate the evils of smoking by eliminating tobacco. Why not continue our idealism of simplicity of cures by eliminating food to prevent overweight with all of its dire consequences?

Revenue for treating alcoholism might be obtained by a higher tax on liquor, whether by the drink or by the funnel.

My early experience in the Legislature has taught me that I learn more by listening, because everything I say, I already know.

I'm gradually improving on my legislative orientation, and getting away from the prevalent 90 per cent lip service for each 10 per cent of concrete information I obtain.

The Farm Bureau convention at Las Vegas this week was encouraging East-West trade.

Western Kansas begins where you wave at people, they wave back.

Presently my views (on the Legislature and state government) are tempered with the realization that I am witnessing the largest room in the world, the room for improvement. (How does that compare with Mark Twain's statement that the U. S. Congress was the only insane asylum in the world run by the inmates?)

Trying to outlaw one of the laws of nature can be only as successful as outlawing inclement weather.

The Judiciary Committee consists of lawyers only. The rest of the Legislature refuses to take the blame for this event. (The event was the appearance of a woman in favor of prostitution as a legal profession.)

Government is too complicated to be run by a high percentage of novices every two years.

We all know that a shepherd with one good dog can run a whole herd of sheep off the cliff. Politics can result in like calamity on many issues.

Fair housing legislation will soon show us if we can give all races of humans the same privileges we now give to animals.

Western Kansas lost on Daylight Savings Time, but I'm drafting a bill to supply our school children with miner's headlights and rear reflectors; so we can get them to school in the early morning darkness.

Our air pollution problem in Kansas may be stopped by the expected two cents a pack increase in the tax on cigarettes.

The statistical downfall of civilization has now been stopped by an adverse committee vote on liquor by the drink.

(Keep up the good work, Doc.)—*The Norton Daily Telegram.*



Personalities—IN KANSAS MEDICINE

Frederick P. Wolff, Pratt, attended the annual meeting of the American Society of Internal Medicine in San Francisco in April. Dr. Wolff served as a delegate of the Kansas Chapter of ASIM.

Dodge City physician, **Max A. Deardorff**, recently received certification as Diplomat of the American Board of Obstetrics and Gynecology.

Norman Harris, Salina, attended a Methodist Convocation on Medicine and Theology in Rochester, Minnesota, in April. The convocation was sponsored by the Methodist Church in cooperation with the Rochester Methodist Hospital and the Mayo Clinic.

Robert Lawson, Topeka, is the new president of the Kansas Radiological Society.

James L. Salomon, Wichita, was installed as president of the Great Plains Industrial Medical Association at the meeting of the association in Kansas City, Missouri, in April.

Dale Darnell has accepted a four year residency in orthopedic surgery at Baylor University Medical School in Houston. He will leave his practice in Olathe in June.

After almost 39 years of medical practice in El Dorado, **Floyd E. Dillenbeck**, announced his retirement in April. Dr. and Mrs. Dillenbeck will move to Sun City, Arizona, in June.

The new president of the Kansas Tuberculosis and Health Association is **Charles Pokorny** of Halstead.

Frank A. Trump, Ottawa, was named to serve on the executive committee. The elections were held during the annual meeting of the Board of Directors in Topeka in late March.

In April, **Dr. and Mrs. Ross Jewell** moved from Bird City to Coffeyville, where Dr. Jewell will practice.

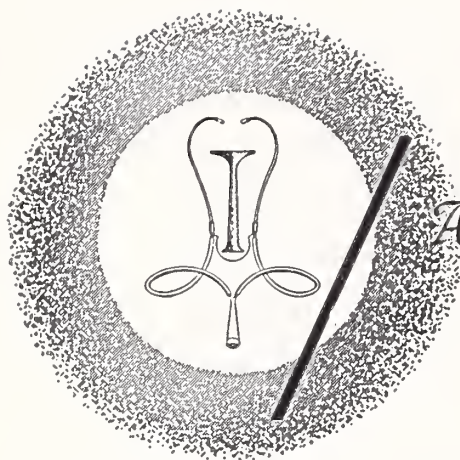
The Kansas State Board of Regents recently announced the establishment, through the Kaw Valley Heart Association, of the Cloud L. Cray Chair of Pediatric Cardiology in the Department of Pediatrics at KUMC. **Antoni M. Diehl**, Kansas City, was appointed Professor of Pediatrics and first incumbent of the new chair.

"TB for 60 Years" was the subject of the talk given by **Francis J. Nash**, Kansas City, at the annual meeting of the Wyandotte County Tuberculosis and Health Association in March.

Stanley W. Lowe recently moved from Salina to Manhattan, where he will continue his practice of ophthalmology.

Claude Harwood, Glasco and **L. C. Owensby**, Concordia, assisted **Karl Stock** of Topeka in conducting a one-day free glaucoma test clinic in Glasco. The clinic was sponsored by the Epsilon Sigma Alpha sorority of Glasco in cooperation with the Prevention of Blindness Program, State Division of Services for the Blind.

William R. Allen, Kansas City, received the fellowship degree of the American College of Radiology at the annual fellowship convocation of the ACR held in Chicago in February.



Announcements

Professional meetings, conferences, and postgraduate courses of national importance are listed for the DOCTOR'S CALENDAR. Notice of the session is posted in advance to allow the physician time to make preparations.

The cooperation of physicians is requested in the continuing study of Epidermolysis Bullosa Fetalis, including therapy in newborns with this fatal disorder, being conducted by the Pediatric Pharmacology Unit and the Birth Defects Center at Children's Memorial Hospital, University of Oklahoma Medical Center, Oklahoma City.

Referral of such patients is needed. In most cases, arrangement for hospitalization without cost to the family can be made. Physicians interested in having patients considered for study may write Arthur W. Nunnery, M.D., Pediatric Pharmacology Unit, Children's Memorial Hospital, University of Oklahoma Medical Center, Oklahoma, or telephone CE 6-1366, extension 670 (area code 405).

JUNE

- June 15-16 Annual meeting, American Rheumatism Association, New York-Hilton Hotel, New York City. Write: Miss Margaret M. Walsh, Exec. Sec., 1212 Avenue of the Americas, New York City 10036.
- June 26-28 Spring clinics in *Pediatrics* sponsored by the Children's Hospital, Denver. Morning seminars and lectures will be held at Vail, Colorado. Write: Joseph Butterfield, M.D., Children's Hospital, 19th Ave. at Downing, Denver 80218.

JULY

- July 14-15 Rocky Mountain Cancer Conference, Brown Palace-West Hotel, Denver. Write: Rocky Mountain Cancer Conference, 1809 E. 18th Avenue, Denver 80218.

POSTGRADUATE COURSES

University of Kansas:

- May 24-26 *Epilepsy, Syncope and Related Disorders*

For further information write the Department of Postgraduate Medical Education, University of Kansas School of Medicine, Rainbow Blvd. at 39th St., Kansas City, Kansas 66103.

University of Colorado:

- June 12-13 *Obstetrics and Gynecology*
- June 19-23 *Marriage Counseling for Physicians and Clergy* (Estes Park)
- July 16-22 *General Practice Review*
- July 31-Aug. 4 *Pediatrics* (Estes Park)

For further information, write the Office of Postgraduate Medical Education, University of Colorado School of Medicine, 4200 E. Ninth Avenue, Denver 80220.

Menorah Medical Center:

- May 19-20 *Modern Trends in Medical Management*
- June 12-16 *Neurologic and Sensory Diseases*

For further information, write the Department of Postgraduate Education, Menorah Medical Center, 4949 Rockhill Road, Kansas City, Missouri 64110.

- June 5-7 *Clinical Electroencephalography*, sponsored by the American EEG Society, Philadelphia. Write: Donald W. Klass, M.D., EEG Course Director, Mayo Clinic, Rochester, Minnesota.



CURRENT PEDIATRIC THERAPY 1966-1967 by Sydney S. Gellis and Benjamin M. Kagan. W. B. Saunders Company, Philadelphia, 1966. 956 pages. \$17.50.

The preface to this text points up several considerations which must be kept in mind in the use of such material as it contains. The physician who goes to this volume should do so for advice in methods and modes of therapy from expert consultants once he has arrived at a logical and correct diagnosis. It is a long and comprehensive work which is well organized. The list of contributing authors contains many recognized authorities in their respective fields of pediatric medicine. Its completeness is evident by the inclusion of such topics as a discussion of major and minor emotional problems.

The reader has available to him a source of information as to how a particular disease entity is managed and treated by a particular author in his particular environment. The recommendations are in most cases detailed and complete even as to drug dosage. The preface further points out the deluge of new information regarding drug therapy with which the practitioner is presented. The conscientious physician must evaluate this material and not merely accept it at face value. His evaluation must be based on the experience of others who are in a position to do controlled studies on large series of patients rather than his own limited observations.

This text offers a source of unbiased information. It should help to insure careful, well planned therapy when therapy is necessary, and to help stay the hand of the practitioner who might overtreat where less treatment or no treatment is necessary. The risks of using drugs in the pediatric patient are great and a number of diseases require no drug therapy. Armed with a correct diagnosis and enough experience and information to adapt the recommendations given in

this volume to his own situation, the conscientious physician will find this a useful work in treating his patient where he should not rely only on his own experience and data presented from commercial sources. —A.C.J.

SPONTANEOUS REGRESSION OF CANCER by Tilden C. Everson and Warren H. Cole. W. B. Saunders Company, Philadelphia, 1966. 560 pages illustrated. \$20.00.

This 560-page book is felt to be as complete as possible a summarization of proven cases of cancer which have seemingly cleared spontaneously. The authors have included a number of their own cases which have apparently regressed without treatment. This book would seem to prove what many of us have had in mind, that there are legitimate cases that have spontaneously cleared. It also functions as a good index to look up various types of cancers to see if any record has ever been listed in which they have spontaneously cleared. The book is obviously one for reference and not for straight, deep reading.—C.A.N.

**USE YOUR MEDICAL
LIBRARIES**

**YOUR LIBRARIAN WILL BE
HAPPY TO ASSIST YOU**

KANSAS STATE DEPARTMENT OF HEALTH
TOPEKA, KANSAS

Summary of Cases Reported in January, 1967 and 1966

Division of Preventable Diseases—Division of Vital Statistics—Kansas Morbidity Incidence

<i>Diseases</i>	<i>1967 January</i>	<i>1966 January</i>	<i>January, 5-Year Median, 1963-1967</i>
Amebiasis	1	1	1
Aseptic meningitis	—	—	—
Brucellosis	—	—	—
Diphtheria	—	—	—
Encephalitis, prim., infect.	—	—	1
Encephalitis, post-infect.	—	—	*
Gonorrhea	375	271	271
Hepatitis, infectious	24	21	27
Meningococcal meningitis	1	1	1
Pertussis	—	1	2
Poliomyelitis	—	—	—
Rheumatic fever	—	—	—
Salmonellosis	7	7	10
Scarlet fever	30	10	17
Shigellosis	2	17	9
Streptococcal infections	450	212	212
Syphilis	116	88	85
Tinea capitis	5	4	7
Tuberculosis	14	13	20
Tularemia	2	—	1
Typhoid fever	—	—	—

*Statistics on 5-year median not available

INDICATIONS FOR IMMUNE
SERUM GLOBULIN

In only three diseases has the value of immune serum globulin been clearly documented and accepted by all authorities, namely, measles, infectious hepatitis, and the Bruton type of agammaglobulinemia. Two additional diseases, in which immune serum globulin may be useful, are rubella in the first trimester of pregnancy, and post-transfusion or serum hepatitis. However, in these latter two examples, scientific evidence is equivocal, the indications are questionable, and the beneficial effect, if any, is not established.

Through a recent policy change, the American Red Cross no longer provides this department with immune serum globulin. The result is that the supply of this material is even more limited than previously. In view of this situation, and of the indications listed above, it is the policy of this department to routinely fill requests for immune serum globulin only for use in prevention or modification of infectious hepatitis in FAMILY MEMBERS who reside in the same household as a case of infectious hepatitis, and for pregnant mothers exposed to rubella during their first trimester of pregnancy.

A special immune globulin request form is available from the Division of Disease Prevention and Control. Requests for immune globulin not submitted on this form should include a brief description of the intended usage.

Dosage Recommendations

1. Prevention of Infectious Hepatitis: Administer .01 cc. per pound of body weight. For practical purposes, it is simpler to give individuals weighing less than 100 pounds 1 cc., and to give 2 cc. to those weighing more.

2. Prevention of Rubella during First Trimester of Pregnancy: Administer 16 to 20 cc. of serum immune globulin.

BOOSTER RECOMMENDATIONS—
ORAL POLIO VACCINE

Now that nearly all Kansas communities have completed oral polio immunization programs for all ages, the question of oral polio booster doses has become a current issue. Although more comprehensive booster recommendations may be developed as research progresses to determine the duration of immunity result-

ing from oral polio vaccine, the following are the guidelines followed by this Department in recommending the use of oral polio vaccine:

1. Oral polio vaccine, either monovalent or trivalent, is the vaccine of choice for primary immunization against polio for children up to 18 years of age. Persons over 18 who have *never* been immunized against poliomyelitis, should be given Salk vaccine. (The U. S. Public Health Service recommends that "the use of oral polio vaccine for persons over 18 years old . . . should generally be recommended only in those situations in which unusual exposure to poliomyelitis might be anticipated. . . .")
2. Currently, booster doses of oral polio vaccine are recommended for the following:
 - A. Children who are entering elementary schools for the first time.
 - B. Persons at unusual risk such as residents of an epidemic area, individuals who are traveling abroad, and those entering the military service.

NEW MEMBERS

The JOURNAL takes this opportunity to welcome these new members into the Kansas Medical Society.

Monte L. Allen, M.D.
Hutchinson Clinic
Hutchinson, Kansas 67501

Warren S. Freeborn, Jr.,
M.D.
Clyde, Kansas 66938

Keith W. Gallehugh, M.D.
St. Francis Hospital
Wichita, Kansas 67214

Duane A. Ginavan, M.D.
1024 West 12th
Emporia, Kansas 66801

Robert F. Hustead, M.D.
9510 Belinder Road
Leawood, Kansas 66206

Lucian L. Leape, M.D.
University of Kansas
Medical Center
Kansas City, Kansas 66103

David A. Leitch, M.D.
117 West 6th
Garnett, Kansas 66032

Winston K. Mebust, M.D.
University of Kansas
Medical Center
Kansas City, Kansas 66103

Ralph R. Reed, M.D.
4th & Maine
Lawrence, Kansas 66044

Paul M. G. St. Aubin,
M.D.
Apt. 3, 8519 Indian Hills
Drive
Omaha, Nebraska 98114

Charles E. Stevenson,
M.D.
2005 West 92nd
Leawood, Kansas 66206

Robert E. Sullivan, M.D.
520 Sixth Avenue
Leavenworth, Kansas 66048

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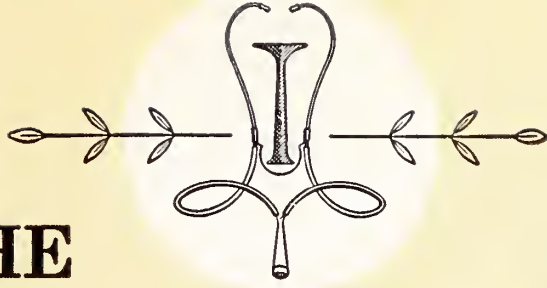
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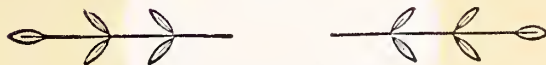
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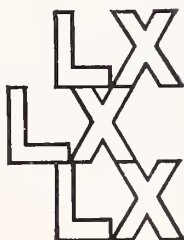
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Scientific ARTICLES

Lymphography

The Illusive Lymphatic System

**JAMES B. DEGNER, M.D., DAVID L. HIEBERT, M.D., and
J. R. KLINE, M.D., *Wichita****

Anatomy

THE PURPOSE of this writing is not to give a complete anatomical outline of the lymphatic system, as the full extent of knowledge of the lymphatic circulation has not been completely elucidated even at this date. This is evident from the knowledge that has been gained from lymphographic studies within the last five to ten years.

In general the lymphatics parallel the venous system. In the lower extremity they tend to follow the greater and lesser saphenous system. In the upper extremity, they follow the basilic and cephalic veins. As a rule, the upper extremity lymphatics are finer than those of the lower, and fewer in number. In the lower extremity, there is little or no communication between the medial and lateral lymphatics until they reach the inguinal area. In the upper sacral area there may be considerable crossing over of the lymphatics. The implications of this will be discussed later. The para-aortic lymphatics drain to the cisterna chyli located anterior to the first and second lumbar vertebrae and this continues on as the thoracic duct to enter, in most cases, the left subclavian vein.¹⁵ In one third of the cases, there may be two or more thoracic ducts, and in ten per cent, the thoracic duct may empty on the right side.⁵ Oc-

asionally, the thoracic duct will cross the supra-clavicular area and axilla before emptying into the left (or right) subclavian vein.

The study of the lymph circulation gained impetus in 1651 with the discovery and reporting of the Lymphatic Circulation by Jean G. Pecquet. In 1670, Moellen Brogii described the communication of the lymphatic systems with the urinary system as the cause of chyluria, although this condition had actually been described by Hippocrates in noting that a woman had voided oily urine.¹² The actual study of lymphatic vessels and nodes with contrast media was first introduced in 1931 by Carvalho with the direct injection of contrast media into palpable nodes. It was not until 1955 that Kinmouth described a practical method for the injection of contrast material directly into a lymph vessel.¹⁵ Although this is an exacting technique, lymphography has now become an accepted procedure with the more recent specially designed equipment for lymphography and the use of modern radiographic equipment.

* Dr. Degner and Dr. Hiebert are residents in Radiology, and Dr. Kline is the director of the Department of Radiology and Nuclear Medicine, St. Francis Hospital, Wichita.

Only a portion of pathways of an area opacify from a given injection site and there is no constant pattern of nodal anatomy, number or position.^{3, 14} With disease involving a particular lymphatic channel and nodes, or adjacent channels and nodes, significant information may be gained. An example of this is carcinoma of the cervix where the primary sites for metastases are the hypogastric, parametrial and paracervical channels leading to the obturator node. The external iliac chain, which is opacified in the usual lower extremity lymphangiogram, is only a secondary site for metastases from carcinoma of the cervix; however, these may be distorted by involvement of the hypogastric and paracervical nodes. The same is true with carcinoma of the prostate, bladder and uterus.

There seems to be an inverse relationship between the size and number of nodes, that is, the larger the nodes, the fewer number opacified. There is a relationship between patient's age and size and number of nodes. The younger the age, the smaller the nodes and the greater the number. The older the patient, the larger the nodes and the fewer the number visualized in a particular chain.

In lymphatic anatomy, it is important to remember that the afferent lymphatics enter the node peripherally and are continuous with the sinusoids of the lymph node. The lymph collects and exits via the efferent vessels at the hilum, and there is usually always an anatomical notch at this area. This hilar notch may be mistaken for a defect during the interpretation.

When filled with contrast media, the normal nodes are usually homogeneous, dotted or granular in appearance and these nodes are best visualized at 24 to 48 hours when maximum filling of the nodes has occurred.

In experimental studies in dogs it is known that lymph nodes have a dual circulation.¹³ They have an arterial circulation as well as lymphatic. In one study, two groups of dogs were used. In the first group, the arteries and veins of the node were divided and the lymphatics left intact. In the second group, all of the lymphatics, both afferent and efferent were divided from the node and the artery and venous system to the node were left intact. A five-month follow-up led to the conclusions that the lymph node can survive in either of the above conditions, and the lymph channels, both afferent and efferent, were restored within two to three weeks post-operatively. Because of the frequent normal crossover of lymphatics in the para-aortic chains, a bilateral lower extremity lymphangiogram should be performed before a retroperitoneal lymph node dissection is done. Many have suggested a scalene node biopsy, especially Virchow's node on the left, prior to any radical surgical

procedures.¹¹ The para-aortic vessels usually empty into the cisterna chyli as mentioned before at L-1, L-2 level and into the thoracic duct which is very close to the right anterior border of the thoracic vertebra. The thoracic duct ascends between the aorta and azygos vein, swings to the left at approximately T-5 to pass behind the aorta and continues along the dorsal vertebra. It angles sharply at the level of T-2 and terminates by entering the left subclavian vein at its junction with the internal jugular vein. Variations may occur here and the thoracic duct may extend to the supraclavicular or axillary area before dumping into the subclavian vessel.

The physiology or function of the lymphatic system is primarily to return protein from tissue spaces to the blood; to play a role in redistribution of fluids in the body, being capable of shifting fluid from one compartment of the circulatory system to another; to remove particulate matter, *i.e.*, bacteria, etc. from the tissues, and to help in maintaining tissue nutrition.¹

Histology

The contrast media used is an ethyl ester of poppy seed oil and contains 37 per cent by weight of iodine. Autopsy studies have indicated that in the lymph nodes the Ethiodol may persist up to 24 months. It may form pseudo cysts as early as 12 hours after the study, and it is found that malignant deposits and areas of fat and fibrosis displace the normal lymphoid tissue and do not allow filling. In the lungs the contrast media may be present initially in the alveolar capillaries and later within the alveolar spaces. Autopsies several months after the procedure reveal no Ethiodol in lungs. No significant inflammatory reaction has ever been noted. No pulmonary infarctions, fibrosis or other serious reactions have been reported.¹¹ Experimental studies in dogs reveal, however, that large doses of oily Ethiodol given intravenously may cause pulmonary infarctions. In the kidneys, the material was found in the glomerular capillary and peritubular capillaries in 23 per cent of the cases. There was no evidence of renal infarction or inflammatory changes. Contrast material was noted in the spleen in 95 per cent with no evidence of reaction. Contrast material has been found also in the heart, liver and brain.⁴ Experimental occlusion of the thoracic duct in dogs has led to lymph node filling in the mediastinum, the opposite supraclavicular area and along the intercostals into the axilla. This also produces early spillage of contrast media into the lungs confirming the presence of lymphaticovenous anastomosis.

Applications and Indications

The application of this procedure has not been ex-

tremely popular primarily for three reasons: (1) the difficulties of technique which are quite exacting and time consuming, (2) the difficulties of interpretations which depend a great deal on the skill of the interpreter, and (3) a negative exam means very little. These are the reasons that the original enthusiasm has been replaced by some skepticism. False positives in interpretation of nodal metastases have quite properly provoked considerable criticism. As far as advantages, it does offer the only non-excisional approach to the differential diagnosis of disease involving the lymphatic system.

The applications of lymphography are broken down into two major areas.^{5, 11, 16} Diagnostic lymphography may provide a distinction between lymphatic and venous edema, may assist in the detection of nodal metastases, assists in the demonstration of primary lymphatic neoplasms, may assist in the evaluation of completeness of surgical excision of regional lymph nodes, and may help in differentiating the various lymphomas. In therapy, lymphography may define the radiotherapeutic portals, may assist in the determination of the amount of shrinkage or regression of tumor bearing lymphatics in the post-surgical, post-radiotherapeutic or post-chemotherapeutic patients, and may assist the surgeon performing pelvic or retroperitoneal lymphadenectomy if chlorophyll and Ethiodol are mixed. This mixture dyes the nodes and lymph channels green in color, making them more easily identified at the time of surgery.⁷ Polaroid films or radiographs may also be taken in surgery to see if there are any remaining nodes. Ethiodol tagged with iodine-131 has been used; however, the therapeutic aspects are of questionable value.

There are four major categories in which lymphography has been used. These are as follows:

1. Determining the etiology of peripheral edema.
2. Inflammation, both acute and chronic, including cases of cat scratch fever, infectious mononucleosis, abscess, tuberculosis, histoplasmosis, sarcoidosis and dermopathic lymphopathia.
3. Evaluating the extent of neoplasms such as:
 - a. Lymphomas, including Hodgkin's, reticulum cell sarcoma, lymphosarcoma, mesenchymoma, mycosis fungoides, multiple myeloma and leukemias.
 - b. Metastatic carcinoma arising in the genitourinary tracts from cervix, vulva, endometrium, vagina, ovary, breast, testis, kidney, bladder, prostate, penis, and urethra; the alimentary tract including stomach, small intestine, colon, rectum and anus; the respiratory tract primarily from the lung; and the nervous system including neuroblastoma and sympathico-blastoma.
 - c. The sarcoma arising from skin, bone and joint. Neoplasms can be evaluated as to extent

and lymphography thus becomes important in cancer staging.

4. Miscellaneous, other conditions including; F.U.O., caval obstruction, NTPP, sickle-cell disease, thalassemia, agranulocytosis, myeloproliferative disease, allergic angiitis, mediastinal mass, chylothorax and chyluria, and post-adenectomy.¹⁶

Technique

1. Staining of the lymphatics. Brilliant blue, patent blue, or methylene blue dye of approximately one per cent concentration is mixed in a syringe with equal amounts of Xylocaine, one per cent. Under aseptic conditions approximately 0.2 cc. is injected interdermally in the web spaces between one or two toes or fingers. This causes a discoloration of the skin.

2. The dye is picked up within five to fifteen minutes by the lymphatics. A small incision is made through the anesthetized skin on the dorsum of the foot or hand, the lymphatic vessel is located, isolated and cleaned and cannulated with a special number 27 to 30 needle and connecting tubing.

3. This is connected with a 10 cc. syringe containing Ethiodol. Ten cubic centimeter is injected with a special pressure injector in each lower extremity. Five to seven cubic centimeter are used for upper extremities.

4. The medium is followed with the image intensifier or by periodic films through the course of the pelvic, external iliac, and para-aortic vessels. The injection is usually discontinued when the contrast material reaches the cisterna chyli.

5. The patient usually must remain supine and immobile throughout if visualization of the thoracic duct is to be performed. Normally, the Ethiodol clears the lymphatic vessels within several hours. The nodes are best visualized at 24 hours or longer. These normally can be demonstrated for up to about four weeks. Histologically, Ethiodol can be demonstrated for up to about two years. Chlorophyll may be added to the Ethiodol for the green color. Iodine-131 tagged Ethiodol may be used for therapy. The entire procedure usually takes an average of about three hours. It may take as long as four or five hours.

Complications

Serious complications from this procedure are very few. Complications seem to be related somewhat to the amount of Ethiodol or contrast agent used.^{5, 11, 16} With those using less than 18 cc. total, 13 per cent exhibited various reactions. With 18 to 20 cc., 24 per cent exhibited some reaction. With greater than 20 cc., 48 per cent exhibited reactions. Reactions in the order of frequency were: fever in 25 per cent, nausea and vomiting in six per cent, pain in about four per cent, respiratory symptoms including cough in about two per cent, a rash in one per cent, infected

cut down in one per cent, and lymphangitis in one-half per cent. Approximately three to four per cent of those attempted are unsuccessful because of technical factors. Lymphatic ruptures and extravasation can occur. Pulmonary oil embolization occurs in almost every case, but creates symptoms in only a few.⁴ Intravenous injection has occurred accidentally with no serious complications. Some experimental studies have indicated that there is an apparent increase in circulating tumor cells in the blood during lymphangiography. This is also known to occur during surgery.

Interpretation

A. Lymphedema

1. Idiopathic lymphedema is considered to be congenital in four main types of abnormalities.

a. There may be hypoplasia. This represents about 55 per cent of the cases. They usually have fewer lymphatics which are larger in caliber than normally found.

b. Dilated or varicose channels are noted in 24 per cent. This type is frequently associated with dermal backflow which is many small collateral channels within the skin.

c. Aplasia occurs in 14 per cent.

d. Dermal backflow alone is noted in six per cent of the idiopathic lymphedema group.

2. Acquired lymphedema and obstruction. This may be due to tumor, surgery, or post-radiotherapy or chemotherapeutic measures. There is usually distortion of the lymph channels by adjacent masses. Multiple collaterals may be noted from the usual distribution. Some dog studies indicate that the lymphatics regenerate within four to eight days. The normal architecture of the node phase is usually maintained.

B. Generalities in Interpretation of Inflammatory Lymphangitis

1. There is usually a uniform enlargement of the involved nodes.

2. Normal architecture is maintained.

3. There is tendency to rounded or oval configuration.

4. If associated with suppuration, the outline is irregular with filling defects and rapid appearance of media within the node. The inguinal, pelvic and para-aortic nodes are increased in size, decreased in density with tiny scattered radiolucencies in some nodes suggesting microabscess formation. In an acute lymphangitis one may see an increase in number of nodes above the usual. In chronic lymphangitis, marginal filling defects are often seen, questionably due to fibrosis and later obliteration of sinusoids or fatty replacements of the lymph tissue. There may also be

noted large groups of matted nodes secondary to pericapsular fibrosis.

5. In chronic skin diseases, one may have diffuse uniform enlargement of the deep and superficial nodes. This has also been reported in rheumatoid arthritis.

6. In tuberculous adenitis, the marginal filling defects simulate a non-specific adenitis or even a metastatic focus. Histologically, these defects are caused by granulomas and fibrosis with hyalinization.

7. In histoplasmosis, there is an increased number of mediastinal nodes with normal gross architecture.

8. In sarcoidosis, there is diffuse lymph node enlargement simulating lymphoma. Non-caseating granulomas are disseminated through nodes distorting the normal architecture with multiple filling defects.

C. Malignant Neoplasms

The third major category as far as interpretation is concerned is malignant neoplasms involving the lymphatic system. The first sub-group is:

1. Lymphomas. It is in this area that the lymphangiogram probably has its greatest value. Lymphomas are usually more readily recognized by the lymphangiographic pattern that they represent. This change in pattern is usually due to a primary change in intrinsic nodal architecture. Margins of the nodes are usually intact. The nodes are usually larger in general and remain patent longer, and the vessels traverse the parenchyma and tumor until the node is completely replaced before lymphatic vessel occlusion or obstruction occurs. There are usually more nodes involved than in carcinoma. Many groups think that they may be able to identify the type of lymphoma by the pattern, if detected early.^{8,9} Testicular seminoma with para-aortic nodes may resemble the pattern for lymphoma. Cases of lymphosarcoma and mesenchymoma have been seen with the pattern resembling metastatic carcinoma. Lymphosarcoma usually has a lacy background pattern within the nodes and maintains the marginal sinuses. Lymphoblastoma is more coarse and granular in appearance. Leukemia is customarily detected by a speckled appearance within the node. Hodgkin's disease presents an abnormal background showing spotty areas of replacement with a residual ring of functioning tissue remaining and surrounding the replaced nodal tissue. Reticulum cell sarcoma looks like Hodgkin's disease. Mycosis fungoides and a case of multiple myeloma showed an increase in the size of the nodes with interior and peripheral filling defects and an over-all noncharacteristic pattern. Neuroblastoma has much the appearance of lymphosarcoma and it is interesting to note that histologically this is a small cell tumor and the pathologist has difficulty in differentiating neuroblastoma from lymphosarcoma.⁶ Melanomas and

other sarcomas look much like metastatic carcinoma with the lymphatic vessels going around replaced nodal tissue.

2. Metastatic carcinoma. The metastatic node often has a moth-eaten appearance and is irregular, especially around the margins. However, it may also have an irregular appearance in the center and tumor may totally replace the node eventually. The pattern at the time of the lymphography depends upon opacification of residual functioning tissue. The major differentiating point in patients with a known primary carcinoma is carcinomatous replacement versus a false positive defect such as fatty replacement or fibrosis within the node. It is important to note that alterations in lymphatic dynamics occur with tumor emboli. The carcinoma embolus enters through the afferent peripherally located vessels and the marginal sinusoids of the node are first involved. In a false positive defect, the lymphatic channels traverse the replaced area. This is not so with carcinoma. The vessels become distorted and circumvent the carcinomatous foci. Therefore, it is felt that any defect traversed by lymph channels should not be considered carcinoma. Secondary evidence of metastases with carcinoma is an interference of lymphatic flow. Lymphatics may be blocked and collaterals set up and this may explain unusual areas of metastases. An example is metastasis to the axilla from cervical carcinoma. Such cases have been demonstrated by lymphography. One may do inferior vena cavography and follow this with IVP phase films to demonstrate the relationship of nodes to other structures in the abdominal pelvic region. Lymphography is difficult or impossible to evaluate following radiotherapy or chemotherapy and radical surgical procedures. There is usually a paucity of nodes and it is very difficult to make a differential diagnosis between fibrosis and metastatic replacement. Collateral lymphatics may be set up following perivascular, perineural sheath or lymphaticovenous anastomosis routes. Carcinomatous replacement, if identified, is usually at a local site of drainage from a known primary. Keep in mind the normal anatomical variations in lymphatic pathways.

3. The third major category is miscellaneous conditions. In interpreting lymphograms in this group it is interesting that most of the positive studies have been in post-surgical or post-trauma, post-radiotherapeutic or chemotherapeutic conditions involving the lymphatics. One condition, chylothorax, may be spontaneous or traumatic with rupture of the thoracic duct. The chyle accumulates first in the mediastinum then often empties rapidly into the pleural cavity causing symptoms of respiratory difficulty ranging from dyspnea to shock and circulatory collapse. If the lower portion of the thoracic duct ruptures, the chyle dumps into the right pleural space. If the upper portion

above T-5 is ruptured, the chyle dumps into the left pleural space. Most of these cases are handled by conservative management. If this fails, surgery is necessary to prevent malnutrition and dehydration. The treatment is simple ligation at the level of the diaphragm. It is important to remember that one third of the patients may have two or more thoracic duct channels at the level of the diaphragm.

Conclusions (General)

1. Lymphography is of more value in lymphomas than in carcinoma.
2. Abnormal morphology in architecture of the lymph nodes does not always indicate the presence of a malignant process.
3. Different pathological processes involving the lymph nodes may show a similar radiographic pattern.
4. Even in a group of the same pathological process, *i.e.* some types of lymphoma, the abnormal architecture may vary.
5. When a larger number of cases have been studied, characteristic adenographic patterns may be established, but as yet direct and indirect radiological signs of lymph node involvement supplemented by clinical and laboratory data (that is by the surgeon and pathologist) are the logical approach to lymphangiograms.
6. As far as the present assessment of value of lymphography in metastatic carcinoma, the following conclusions are made:
 - a. It is frequently helpful in confirming a clinical impression of metastatic carcinoma and in demonstrating progression.
 - b. Occasionally it will reveal clinically unsuspected metastases.
 - c. A negative lymphangiogram does not rule out the possibility of metastatic disease within a visualized node.
 - d. Total extent of the lymph node metastases should not be determined from lymphangiograms alone.
 - e. The procedure may be useful in determining completeness of removal of some lymph node groups.
 - f. It may reveal lymph node response to radiation, chemotherapy and surgery.

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On Borrowed Time

Successful Pregnancy Following Starr-Edwards Prosthetic Aortic Valve Replacement

HELEN STARKE, M.D.,* MARVIN, DUNN, M.D., F.A.C.C., *Kansas City, Kansas,* and C. FREDERICK KITTLE, M.D., F.A.C.C., *Chicago*

SUCCESSFUL PREGNANCY may occur following implantation of Starr-Edwards aortic valve prosthesis. This valve, first utilized in 1960, effectively corrects severe hemodynamic alterations of aortic valve disease, although evaluation of some patients postoperatively may show small pressure gradients across the aortic valve and subnormal average increase in cardiac output with exercise. In the future more women previously incapacitated by aortic valve disease will, after surgical correction of their disease, become pregnant or seek advice about the risk of pregnancy. This case report may be of interest to the physician confronted with this situation.

This 34-year-old married Greek housewife from Athens was first seen at the University of Kansas Medical Center in August, 1964, complaining of chest pain and shortness of breath. The only established episode of acute rheumatic fever occurred at age 17 years. She was asymptomatic until age 24 when exertional dyspnea was first noted. This improved following the administration of a digitalis preparation which she took continuously thereafter. In February of 1964 she developed angina with exertion and subsequently angina decubitus. Although the angina was consistently relieved by nitroglycerin, she was experiencing about 50 episodes a day. She was on a salt restricted diet and was receiving oral and parenteral diuretics. Two previous pregnancies were terminated by spontaneous abortion. A third was terminated by therapeutic abortion in December, 1963, because of severe heart failure with pulmonary and peripheral edema.

The blood pressure was 150/20 and the pulse was 90 and regular. Classical findings of severe aortic regurgitation were present including aortic diastolic regurgitant murmur, loud S_3 , Austin-Flint murmur, Corrigan pulse, Duroziez's sign, Hill's sign, and Quincke pulse. The lungs were free of fluid. There was no hepatomegaly or peripheral edema. The electrocardiogram demonstrated left ventricular hy-

pertrophy and the chest x-ray showed a large left ventricle and dilated ascending aorta. At the time of cardiac catheterization brachial artery pressure was

Although many complications may arise following implantation of Starr-Edwards valve, there is no suggestion from the few case reports that pregnancy increases the risk of fetal mortality. There have been no reports of maternal deaths and no fetal deaths attributable to the prosthetic valve. The late morbidity and mortality resulting from Starr-Edwards aortic valve replacement are still being determined.

170/40. Cardiogreen dye injected into the aorta at the level of T-11 regurgitated to the level of the left subclavian artery and had an early appearance at a sampling site in the left brachial artery.

On September 10, 1964, a number 10 Starr-Edwards aortic prosthetic valve was implanted, correcting the aortic regurgitation. The postoperative course was uneventful. Following surgery the patient continued to take digitalis, but was asymptomatic and returned to Greece in March, 1965. Anticoagulant therapy was discontinued before she returned to Greece.

An uneventful pregnancy was terminated by spontaneous delivery on March 10, 1966. The child was a 6 pound, 10 ounce normal male whose growth and development have been normal.

Before the era of prosthetic aortic valve replacement, there were four patients who were reported to have completed pregnancies with living children after implantation of a Hufnagel valve for aortic regurgitation.¹⁻⁴ One of these experienced congestive heart failure during pregnancy.

To date there have been reports of three patients who have completed pregnancies after successful correction of an aortic valve lesion using the Starr-Edwards valve prosthesis.^{5, 6} One patient who had

* Fellow in Cardiology, University of Kansas Medical Center, Cardiovascular Laboratory, Kansas City, Kansas.

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double valve replacement (aortic and mitral) became pregnant but had a spontaneous abortion at ten weeks.⁵ The abortion could not be attributed to cardiovascular malfunction. The patient was free of symptoms when this occurred.

Although many complications may arise following implantation of Starr-Edwards valve, there is no suggestion from the few case reports that pregnancy increases the risk of fetal mortality. There have been no reports of maternal deaths and no fetal deaths attributable to the prosthetic valve. The late morbidity and mortality resulting from Starr-Edwards aortic valve replacement are still being determined.

In advising pregnancy in this situation, restraint should be exercised. If pregnancy does occur, the few available case reports suggest that there is reasonable likelihood of a successful uncomplicated pregnancy if a good hemodynamic result has been achieved.

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Lymphography

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SK&F CATALOG OF SERVICES

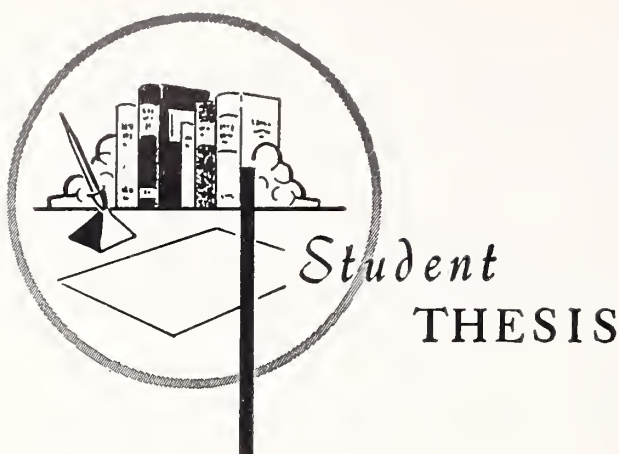
Smith Kline & French Laboratories has just released its *Catalog of Services* for 1967-68. Many readers will be interested in this new edition; it offers 36 pages of SK&F services, available to physicians without charge.

Included in the illustrated Catalog are medical films, booklets, periodicals, medical color television, Speakers Bureau, and the "Code 4" cardiopulmonary resuscitation training program.

New to this year's Catalog is the film, "Reinforcement Therapy," which discusses the application of learning theory to the treatment of emotional disturbance. Also included for the first time are: *Medical Assistant*, a quarterly publication for the physician's office assistant, Oral Communications Seminars for medical school faculties, and Medical Information Service on SK&F products.

The Services Catalog is revised and published yearly by Smith Kline & French as a part of the company's program to provide the medical profession with a wide range of useful services. Readers may receive a free copy of the SK&F *Catalog of Services* by contacting their SK&F Representative, or by writing to the Services Department E-10, Smith Kline & French Laboratories, 1500 Spring Garden Street, Philadelphia, Pennsylvania 19101.

Good weather is no safeguard against traffic accidents. A report by The Travelers Insurance Companies points out that 80 per cent of the 52,500 traffic deaths in 1966 occurred in clear, dry weather.



Incidence of Psychiatric Misdiagnosis in Patients With Brain Tumor

CARL SUTHERLAND, M.D.,* *Phoenix, Arizona*

THE PROBLEM OF BRAIN TUMORS, the organic mental symptoms that occur, and the incidence of both neurological and psychiatric misdiagnoses that occur in dealing with these tumors has been one in which many workers have been interested. Their findings have been less than uniform. In a study of Veterans Administration Hospital patients it was found that 14 per cent of the neurological patients had been treated for a functional disorder before the correct diagnosis was made! On the other hand, no cases of incorrect diagnosis could be found utilizing patient material from both the psychiatric and neurosurgical wards of the Massachusetts General Hospital. It was thought that a study of the University of Kansas Medical Center population would be profitable to find the incidence of patients treated as having psychiatric disorders but who were actually suffering from brain tumors.

The introduction of the brain scan added much to the detection of intracranial lesions. It was decided to review the records of all patients with a primary intracranial neoplasm from the date of availability of this tool which includes the period from March, 1962 to October, 1965.

Case records were obtained through the files of the tumor record service[†] at the hospital. These are

complete files of all tumors with a positive tissue diagnosis following autopsy or surgical procedure. A total of 171 cases of primary intracranial neoplasm was found in this period, of which the charts of 169 were available for review. Of these 169 cases, 164 were found to never have been incorrectly diagnosed or treated for a psychiatric disorder. The case histories of the remaining five that could be considered incorrectly diagnosed and treated as psychiatric problems are presented.

Results

Case 1.—Mr. E.W. was a 68-year-old man who was admitted to the K.U.M.C. neurosurgical service from a psychiatric ward in a private hospital. In retrospect the patient had a slowly developing auditory aphasia for about two years prior to admission and clearly developed an expressive and receptive aphasia that followed a fluctuating, but generally progressive, downhill course. The patient was admitted to the psychiatric ward of the private hospital with a diagnosis of chronic brain syndrome secondary to vascular disease. Neurological and plain x-ray examinations were interpreted as negative, other than the patient's aphasia. The patient was transferred to K.U.M.C. two weeks later, after complete aphasia had occurred, for further examination. Examination at K.U.M.C. revealed a near total expressive and receptive aphasia with no other neurological findings other than possibly a right homonymous hemianopsia. Examination with plain x-rays, brain scan, and carotid arteriogram revealed a vascular tumor in the left parietal region with a calcified pineal shifted one cm. to the right. Craniotomy was performed with a sub-total resection of a grade III astrocytoma.

* This is one of a group of theses written by fourth year students at the University of Kansas School of Medicine, selected for publication by the Editorial Board from a group judged to be the best by the faculty at the school. Dr. Sutherland is now an intern at Maricopa County General Hospital, Phoenix, Arizona.

† All patients of all ages with a documented intracranial neoplasm

Case 2.—Mr. A.Y. was a 67-year-old man who was originally admitted to the K.U.M.C. neurology service with a three-month history of right homonymous hemianopsia with a sudden onset of mild expressive and receptive aphasia. He was evaluated, including a brain scan, and a diagnosis of vascular disease was made. He had some increasing aphasia following discharge and six months later became despondent and threatened suicide. He was admitted to the K.U.M.C. psychiatry service for management. Psychiatric and neurologic examination at this time revealed a probable tumor in the left parieto-temporal area with a repeat brain scan suggested by a subtle but progressive expressive aphasia. He was transferred to the neurosurgical service within two weeks and a sub-total resection of a grade III astrocytoma was performed.

Case 3.—Mrs. M.D., a 44-year-old woman, was admitted to the K.U.M.C. neurosurgical service after a five-week history of intermittent aphasia followed with progressive aphasia, right hemiplegia, headache and vomiting. She was initially hospitalized in her community by a general practitioner with a diagnosis of involutional melancholia causing her speech difficulty on the basis of an "obsessive-compulsive personality and emotional disturbance over her daughter's impending marriage." She was transferred to K.U.M.C. five weeks after the onset of symptoms because of the progressive neurological signs and symptoms. She was found to have severe aphasia, right hemiplegia, right homonymous hemianopsia, probable right hemihypesthesia, and bilateral papilledema. Trephination and biopsy were performed, revealing a left parietal lobe astrocytoma grade III.

Case 4.—Mrs. B.P. was a 47-year-old woman who was admitted from a Kansas state hospital. The patient had suffered a "nervous breakdown" 14 years prior to admission with the onset of grand mal seizures and slight hemiparesis. These symptoms were apparently well-controlled, but two years prior to admission she developed a sudden personality change with delusions, belligerence, and at least one suicide attempt. She was seen by several chiropractors and had at least one admission to a psychiatric ward in a private hospital. She was admitted to the state hospital five months prior to transfer to K.U.M.C. with a concomitant left hemiparesis and ataxia. She progressively deteriorated over the ensuing months and was transferred to K.U.M.C. Neurological examination revealed inappropriate speech, mild left hemiparesis, slight ataxia, and mild hypesthesia on the left. Craniotomy and biopsy revealed an astrocytoma grade III of the right frontal lobe.

Case 5.—Mr. W.C., a 20-year-old man, was admitted from a Kansas state hospital. He had apparently been well until two years prior to admission when he developed a progressive social withdrawal to the point that he was spending all of his time making model airplanes. He was admitted to the state hospital two months prior to transfer to K.U.M.C. with a diagnosis of acute brain syndrome secondary to airplane glue

intoxication and possible schizophrenia. He was noted to have some ataxia, but no other physical findings. He showed slight improvement until the day of transfer when he was found unconscious. On admission he was found to be deeply comatose with a dilated, fixed right pupil, bilateral papilledema, a coarse tremor of the left extremities, a bilateral Babinski, and a Hoffman response on the left. Craniotomy revealed a highly malignant astrocytoma of the right thalamus.

These represent the total number of cases to be considered in assessing the incidence of misdiagnosis of intracranial neoplasm for a psychiatric disorder. We feel the first two cases should not be considered since organic disease was recognized prior to and on admission. In each instance the presumptive diagnosis was thought to be that of cerebral vascular disease. Psychiatric treatment was requested for gross personality difficulties precipitated by the supposedly non-progressive primary organic brain disease. The psychiatric staff of the private hospital and of K.U.M.C. each made the correct presumptive diagnosis and appropriate therapy was instituted within two weeks.

The last three cases may represent true delays in correct diagnosis by the family physician in case three and by the staff physicians of the state hospitals in cases four and five.

Discussion

That brain tumors can cause personality changes and disorders is well-known and documented. This is easily understood considering the destruction and displacement of tissue that occurs although the mechanisms of early mental change are not wholly elucidated. It has been feared that the personality changes can occur alone or completely mask the early evidence of more conventional neurological symptoms resulting in misdiagnosing these cases as psychiatric disorders with resultant delay in proper therapy. In an excellent recent review of this subject by Olis and Weisman from Massachusetts General Hospital, material is presented suggesting that this sort of misdiagnosis is quite rare, given the staff and facilities of an excellent general hospital. Since the personality changes that usually occur with loss of neuronal tissue are sufficiently different from the deranged thinking patterns manifested by patients with functional mental illness, and since abnormal neurological signs and symptoms are usually present, the correct diagnosis of neurological disease can almost always be made by an adequate history and examination. Evidence to the contrary has been presented comparing autopsy data from mental hospitals to that of general hospitals and incidence of prior psychiatric treatment for patients on neurology and neurosurgery services. This data is usually obtained from state and Veterans Ad-

ministration hospitals where there is often insufficient staff for the large number of patients and it is understood how delays in diagnosis could be made under these conditions.

We feel our findings support the proposition that there is little protracted confusion of organic as opposed to functional mental disease, given adequate staff and diagnostic facilities.

Summary

One hundred sixty-nine cases of intracranial neoplasm were reviewed to find the incidence of misdiagnosis as a psychiatric disorder; 164 were never mistaken as a functional illness. Of the remaining five cases, two were not thought to represent misdiagnoses. The three remaining cases were thought to represent delays in diagnosis by the family physician in one case and the staff of the state hospital system in two cases. No errors by psychiatric services could be found in adequately staffed and equipped hospitals.

I wish to acknowledge the help of Dr. J. L. Denner of the Department of Psychiatry, without which this paper would have been impossible.

EDITOR'S NOTE: References may be obtained by writing the JOURNAL, 315 West 4th Street, Topeka, Kansas 66603.

GARDENING

The home gardening season is in full sway across the nation again this month.

After long months of winter, followed by spring rains, millions of American householders are back at the annual battle with crab grass and insects in the perennial effort to add a touch of natural color and beauty to the American scene.

The American Medical Association recommends gardening as good therapy and good exercise for almost everyone. Gardening also entails some hazards of health and safety, most of which can be avoided.

- If you have done nothing more strenuous than sit by the fire most of the winter, by all means take it easy for the first few weekends of gardening. Give your muscles a chance to regain strength gradually, rather than trying to do too much on the first day out.

- Gardening often brings cuts and scratches from twigs, thorns, sharp tools. First aid usually consists of washing the scratch with soap and water and applying an adhesive bandage. Let it bleed a little to wash away impurities. Deeper cuts may require medical attention.

- Tetanus germs are harbored in the soil, particularly if barnyard fertilizer is used. The home gardener who fails to protect himself with tetanus immunization is courting lockjaw.

- Power tools, particularly lawn mowers, are standard equipment for the modern home gardener. They save many an aching back, but they are potentially dangerous. Your power lawn mower comes with instructions on its safe use. Study them carefully. If you're in doubt, check with a mechanic as to potential hazards of power tools.

- Insect sprays and powders, plus poisons that kill weeds, are useful adjuncts to gardening. These, also, have inherent hazards if improperly or carelessly used. Once again, read the directions, especially the warnings.

- Bees, wasps and spiders are out for the spring season, too, and now and then one of them may sting you. For most of us, a sting is painful and causes swelling, but it isn't serious. If you are one of those individuals with an allergy to insect bites, ask your doctor about the desensitizing injections.—*AMA Health and Safety Tips*

EXECUTIVE HEALTH

It isn't absolutely necessary for executives to have heart disease, ulcers and strokes, ailments commonly associated with American businessmen who reach the management level.

Further, these ailments are by no means limited to executives. They can affect almost any one.

A few suggestions offered by the American Medical Association to help executives preserve their health also can be readily applied to most Americans, regardless of level of employment.

- Watch your weight. Strenuous diets usually aren't necessary. Just eat less.

- Exercise. Golf is fine, if you enjoy it. But if you're one of the many who lose their tempers and get upset over every missed stroke, brisk walks will serve just as well as golf, probably better.

- Take vacations. Real vacations, not just an occasional day or two. And plan your vacation so that there is time to relax and unwind.

- Smoke less. Better still, quit smoking altogether, if you can. There is much debate about the effect of tobacco on health, but there is no argument on the premise that it doesn't do anything good for you.

- Cut down on drinking. Two cocktails before dinner may be one too many. One might be too many for some people.

- Get plenty of sleep. And try to sleep without the use of drugs, if at all possible.

- Put business worries out of your mind when you leave the office. This sometimes is easier said than done. Perhaps you will need to get active in something else, such as the affairs of your church, to get your mind off your job.—*AMA Health and Safety Tips*.

The President's Message

DEAR DOCTOR:

As is true each year, numerous areas of activity concern the Medical Society. This year four outside areas particularly demand our attention.

1. The University of Kansas School of Medicine.

Our relationship here is excellent. It must continue and expand. We are concerned with the School in undergraduate education, postgraduate education, and the orderly development of the Heart, Cancer, and Stroke program.

2. Blue Shield.

Again we are fortunate to have close ties. We are concerned with them in the concept of usual and customary fees, the development of new policies and products, their present role as fiscal agent under Title XVIII, and their coming role as agent under Title XIX.

3. The Board of Health.

Here our relationship is improving and must be expanded. We are concerned with the Board in Comprehensive Health Planning, and in the concept of the definition and extent of Public Health.

4. The State Board of Social Welfare.

During the year our relationship with them improved greatly. We developed, under Dr. McClure, a real spirit of cooperation. This must continue. Here we are concerned in the implementation of Title XIX.

The key to our good relationship with these agencies has been communication. We must extend these lines of communication. We have the means to do so through our committees, our commissions, and the executive office. We have the means to communicate with our individual members through the JOURNAL, through letters from the executive office, and through district council meetings. Many other areas of Society activity are of equal importance to us and must be fostered, toward the goal of the best care for our patients.

Sincerely,



President





Home Health Services

Medicare provides, in addition to services with which every physician has become familiar, home health care with up to one hundred visits a year by other than a physician under both Part A and Part B. For this program the service must be under the direction of a recognized or licensed agency or institution; shall consist of nursing and at least one other type of care such as speech therapy, home health aid, etc.; and be ordered by a physician.

The Kansas Legislature passed into law House Bill 1603 which authorizes county health departments to establish home nursing care service and to charge for this either to the patient or whatever public or private agency is willing to buy the service. Again, home nursing care can be utilized only upon the request of the patient's attending physician.

So at last, the long time desire of the medical profession to extend into the home certain services only available in hospitals or nursing homes is becoming a reality. It could abbreviate, and at times prevent, institutional care and be a major factor in reducing the cost of illness. This will react first to benefit the patient because his hospital stay can be shortened. At long range it will serve to eliminate overcrowding in hospitals and thereby postpone the need for additional building expenses. It will also vastly conserve the physician's time otherwise spent in personal visits, often only to assure himself of the patient's condition, because under such program the nurse will regularly report her impressions.

This all sounds good on paper. A visit by a nurse or a home care aide will cost less than a day in the hospital. But, as it is with most things that sound good on paper, there will be problems.

The immediately apparent question relates to personnel. Will the home care nurse resign her present

employment in the hospital or doctor's office, or can this program recruit the nurse who is a homemaker for work a few hours a day? Hopefully the latter will succeed. The program appears ideally constituted for persons who prefer part time positions, with some scheduling latitude and perhaps payment on a fee-for-service basis rather than a salary.

Another potential problem, but of equal magnitude, is the role of the physician. Unless this service can be of help to him, unless he feels secure in what the nurse does for him, the doctor will not order such care—which eliminates the program. One must assume every effort will be made to secure competent people and that they will conscientiously endeavor to carry out the physician's orders.

Even then there appears to remain a problem. How soon will the doctor regularly remember this program? How soon will he evaluate each patient's need in the light of home nursing care and actually release his hospitalized patient earlier than would otherwise be possible? Or will he be tempted to follow the line of least resistance and use home nursing service, if at all, in addition to his present care?

That, in the final analysis, is the key to this program. It is the key not only to whether there shall be a home care program, but it will demonstrate the physician's genuine concern over reducing the overall cost of illness.

The *Journal of the American Medical Association*, July 11, 1966, pages 129-132 carried an excellent article on "Development and Use of Home-Care Services—Suggestions for Physicians." Reprints are available upon request directly from the AMA, the Staff Task Force on Home Health Service. This is recommended for any doctor as he considers his position on the subject. It could well provide a productive discussion in the county medical society meeting.

Official Proceedings

Report of the 1967 Meeting of the House of Delegates

The transactions of the 108th Annual Session are published in this issue of the JOURNAL.

During the first session the chairman of each of the five commissions made his annual report and introduced resolutions recommended by his commission. All resolutions appear as they were adopted under the minutes of the third House of Delegates. It should be noted that resolutions 11, 24 and 26 were adopted at the time of their introduction at the first meeting of the House of Delegates. They appear in chronological order under the minutes of the third session.

FIRST SESSION

The first meeting of the House of Delegates was held at the Town House Hotel, Kansas City, Kansas, beginning at 3:30 p.m. on Sunday, April 30, 1967.

The meeting was called to order by Dr. Thomas F. Taylor, Phillipsburg, speaker of the House. Dr. Taylor announced the appointment of two reference committees as follows:

Reference Committee No. 1: Dr. William Roy, chairman; Drs. W. G. Cauble, John W. Travis and Evan R. Williams.

Reference Committee No. 2: Dr. Vale Page, chairman; Drs. Ernest W. Crow, Richard M. Glover and Edward F. Steichen.

The report of the Treasurer was given by Dr. John L. Lattimore. A detailed audit of Society income and expenses was distributed in mimeograph form to each delegate. It showed that Society income exceeded expenses by \$5,000.

Dr. Francis T. Collins, Secretary, presented the membership report for 1967. The total membership for 1967 was reported as 1,875. Membership for 1966 was 1,884. This represents a decrease of nine members.

SPECIAL REPORTS

The Executive Director

I have a very few comments and will not delay the progress of this meeting long.

First of all, I want to express my deepest gratitude to the members of the staff in your Executive Office for the wonderful way they took care of work during the three months the legislature was in session. I know this was not easy for them but they were great and I know this "thank you" to Mrs. Braun, Miss

White and Mrs. Rogers comes also from you.

Most especially do I want to thank Swede. He helped in our legislative effort. He did much of the office work and absolutely everything our Society did to assist the host committee and Mrs. Hunt in the preparation for this meeting. Swede has been superb, but I do not need to tell you this. You have seen him work. You know. Let's be real good to Swede. We don't want to lose him.

As for me, this three months wasn't exactly a holiday. A legislative session is a state of anxiety—a poker game in which the dealer makes up the rules and doesn't tell you what they are. Except for one—you never get to deal.

May I drain just a little more out of this analogy of the poker game. Either you play every deal in which the stake is of interest to you, and you stay into the final call, or someone else picks up your chips. Some hands you lose, even when you think your cards were good, because another hand was better.

Occasionally a fifth ace shows up. Or a deuce is wild and they forgot to tell you. So you smile and play again.

In the end, you assess your luck by how you stand when the game is over. This I will try to do now. A final legislative bulletin will be prepared as soon as the last calendar is printed. This often takes weeks—I checked on Friday and it was not available. When it is, we will give you the exact outcome of every bill and resolution we reported throughout the session. For now only a few.

Comprehensive Health Planning was given to the Board of Health almost without argument. I like to think we had a little to do with this, but Dr. Hugh Dierker made it possible. The respect and the confidence the members of the legislature have in him is phenomenal.

Also, look for a moment at the members of the Board of Health. I know a rare cohesion has come to pass and that the Board of Health is ready to unite with this Society in coordinated health projects if we will only give them the opportunity.

This is possible in many ways, but the challenge open at this time to participate in the limitless potential of Comprehensive Health Planning is so completely essential to the future of Medicine that I hope you accept the opportunity—not in idle semantics only, but with vigor and through the contribution of your time and, most of all, your talent.

I will digress from legislative matters at this point to mention *Heart, Cancer, Stroke* because it, like Comprehensive Health Planning (and perhaps the two are related), represents a major opportunity.

Your opinion of the federal law and of the theory involved in Heart, Cancer, Stroke is not in question here. Let it be what it always was but at this moment examine the existence of a fact.

Your own Medical Center has received a federal grant. Dr. George Wolf, Dean of the School, has come before our Council and last winter to the Special Session of this House and asked your help. In better words than mine, he asked your guidance to help him use this money wisely, to assist you (if you will show him how) in giving your patients the finest possible care.

How lucky can we be? Doctor Wolf came to our state—a stranger. He had the authority and the federal appropriation to operate this program, but he came to you. If we ever faced an obligation to cooperate that time is now. I suspect this crisis can become the fulcrum upon which the balance will swing into an era of the closest ties the Society and the School have ever known. I suspect also that the turning point rests with what weight you as a Society give in cooperation.

Now, once again, to an evaluation of our legislative fortunes. At your request, the legislature granted you immunity from civil liability in your work on utilization review committees, but they went even further and included all hospital committees upon which you are required to serve. At your request they rejected the attempt by optometrists to be included under Blue Shield. We followed a large number of bills and I cannot recall a major instance where you were forced to accept what you opposed.

The large interest this session, of course, was Title XIX. Dr. McClure will tell you about the bedlam that existed on this subject as the session neared its close. I want to touch only on some things he may omit.

First, he will not tell you that every doctor in this state is deeply in his debt. But you know it. Perhaps you are less aware of the hours he gave in your behalf and of the heartaches he endured—of his patience to bring confidence where suspicion existed—of his firmness when compromise was offered—of his poise in the face of criticism—of his determination to do what you asked of him.

Not many have ever given more to their Society and with less self interest. I know you are all proud of your president. So am I. He has been absolutely magnificent.

Second, Dr. McClure may well evaluate this law differently, but with my personal view first Dr. McClure can then amend my comments later.

You got your usual and customary fee, establishing for the first time in this state that your services are purchased. Until now, Welfare *provided* health care—now they buy it. In spite of HEW rulings or PL 89-97 itself, do you know less than half of the state-implemented Title XIX programs pay usual and customary fees?

This was not as easy as it appears. Dr. McClure laboriously first convinced the Welfare Board and then the House committee. It wasn't easy at all. I recall the charges of robbery—keys to the state vault—rich doctors and many more.

And you will get Blue Shield for intermediary as they are for Title XVIII, except this matter of checks. At this point the argument became a little silly. Somehow for a hundred years the state has hired a little man who looks over papers before the state can pay any bill. Ostensibly he satisfies himself (and thereby the sovereign state of Kansas) that the product has been received or the service rendered—that the product or service was properly authorized—and that whoever got it was eligible to receive it.

They call this a pre-audit. You sense an air of reverence when those words are spoken. At least it is a custom not about to be discarded at this time—so every physician's claim is subject to a pre-audit before the bill can be paid and after that—everyone agreed it would be easy for the state to prepare the check. And apparently the members of this Society (by the results of the questionnaire) didn't care since the source of the money would be the same in either case.

The important point is that the pre-audit cannot alter the fee. This is established by Blue Shield and not subject to question *except* by Welfare in this state or HEW nationally, and then only to justify the fact that it really represents the physician's established fee and that it lies within the prevailing range maximum—and for this, if it occurs at all, they deal through the intermediary.

The next point is *Chiropractic*. When this happened, Dr. McClure wanted to kill the bill and could have too. In fact, he did. The bill was dead overnight but revived by the potent force of politics and with the aid of two-party resuscitation it survived. With chiropractors in it.

For the following analysis would you permit me again to refer to the poker game and ask us to examine our cards. The stacks are the bill itself. Will the next legislature deal us a better hand or, stinging under postponement, will they take away some of our present hard played earnings?

Examine the hand. If the state pays for your services, can you tell the state not to purchase other services also? Your card, this is quackery and not good health care.

Their card—no money was appropriated this year for chiropractic service so it cannot be purchased except upon request of a Doctor of Medicine as he does for nursing care.

Your card—then why write them into the Kansas law?

Their card—We didn't. We took from the federal law the exact language of the definition "medical assistance shall mean . . . services furnished by licensed practitioners within the scope of their practice as defined by state law." We are implementing a federal law, they told us, so if we use the language in the federal law and you do not like this, fight them—not us.

They had other cards—like the two states where the attorney-general overruled Welfare policy and forced the inclusion of chiropractic—OR the example of California, North Dakota and many other states, where chiropractors are written in by name—OR the psychological impact of the fact that every other licensed practitioner in Kansas is included, the osteopath, dentist, podiatrist, nurse—and the chiropractor sits on your Healing Arts Board.

How high do you force the bet on that hand? Especially when you remember how much more is riding with this.

So you evaluate your winnings and your losses when the poker game is called. And here, in conclusion, is mine.

As a citizen, I am as bitterly opposed to PL 89-97 and its Title XIX today as I ever was. It is economically unsound, fundamentally unjust and grossly unfair to our children. Therefore, I will take every opportunity afforded me to work for its amendment or repeal.

If I were a physician, I think I would resent third-party payments where my patient had made no contribution toward the cost. I am not sure, in my instance, it would be idealism. I simply can't see how anyone is a good patient if nothing short of the fright of death can bring him a feeling of responsibility.

As a physician, I think I might welcome the usual and customary fee on the basis of an economic expediency. I might have a nagging fear that I was selling my birthright—that collection problems were being traded for a fee schedule—that I would work by the hour like a plumber or on cost estimates like the garage mechanic.

I think I might wrestle this for awhile, and at the expense of some emotional reserve might resolve my problem as follows:

Today at least I charge my private patients what I think my service is worth. Today at least Welfare offers to pay about the same fee for its Title XIX recipients. So if this places me into a trap that will spring in the future to enslave me, what, I then ask myself, would

be better today—no fee at all—\$1.80 a point as at present? Would either of those save me in the future?

Cold logic forces me to the conclusion that only direct billing could save me. The doctrine of individual responsibility alone can spare me the risk of audits and federal rules. If I were financially independent now, I might stand on that premise not only for the Title XIX recipient but for all insurance coverage and Blue Shield too.

I believe I could not adopt this principle unless I stood by it for all my patients. This, of course, would affect my practice unless most doctors did the same.

Since not all are wealthy enough to take such risk, I think I for one would say, my usual and customary is better than the \$1.80 a point I have been getting—that I like dealing through Blue Shield better than Welfare.

And I, for one, would thank Dr. McClure for what he accomplished in this last session of the legislature.

OLIVER E. EBEL, *Executive Director*

The Editor

During 1966 six issues of the JOURNAL were Special numbers—January and February from the Hertzler Clinic, the 20th annual University of Kansas Medical Center number in March, the program issue for April, the papers from the meeting of the Kansas Chapter of the American College of Surgeons in August, and the fine Johnson County issue in December. I believe that I am correct in saying that the majority feel that these issues are the most popular which we have; certainly they are the largest, and are of inestimable value in our efforts to maintain the editorial quality of the JOURNAL.

The total editorial content of the 1966 volume was 622 pages, compared with 568 pages for the preceding year—an increase of almost 10 per cent. There were 68 original articles of a scientific nature and eleven additional ones on historical subjects, six student theses, three clinical pathological conferences, and four tumor conferences. We are particularly appreciative of the privilege of publishing the interesting account of the early days at the University of Kansas School of Medicine written by Dr. Ralph H. Major, eight sections of which appeared during 1966, and the remaining four during the first months of 1967.

My last two annual reports to the House of Delegates were rather gloomy insofar as they concerned the status of income and its relation to production costs. The last year has seen some improvement in the advertising income, which is more or less general among all the state journals. The advertising sold by the Bureau (State Medical Journal Advertising Bureau) in 1966 was 45 per cent above that of 1965, and it was the first of a good many years in which all 33 journals subscribing to the Bureau had an

increase in their advertising income. This improvement is continuing into 1967, and while not officially a part of this report for 1966, our advertising for the first three months of 1967 was \$3,680 above that of the corresponding months of the previous year.

While the improvement in 1966 has not been sufficient to put the JOURNAL entirely "in the black" financially, it is significant, and I do feel there is reason to be encouraged about the future. During 1966 we did withdraw \$4,000 from our reserve for payment of current expenses, but were grateful to have it available without having to request any additional subsidy from the Society.

Our effort to obtain additional local advertising by mail solicitation through the medium of a local advertising agency, undertaken with enthusiasm, proved a dismal failure, and points out again the value of the Bureau to all the state journals in securing the national advertising so important to our financing.

We have attempted to make your JOURNAL something which you would want to read, at least in part, for as I have said to you before, it is *your* JOURNAL, not that of the Editorial Board, and we are only supposed to try to make it what you would like to have it be. For this we obviously need your guidance, your suggestions and your writings.

There is one new member of the Editorial Board this year, Dr. Don Pierce having taken over the position vacated by Dr. Dwight Lawson a year ago, after 20 years of service. Other members of the Board in Topeka are Drs. David E. Gray, Richard Greer, and John Segerson, and our Associate Editor in the University of Kansas School of Medicine is Dr. Jesse D. Rising. All of these have again done much for the JOURNAL in the past year. The contributions of Mrs. Mary Rogers and Mr. Oliver Ebel are known to most of you. To all of these I extend my most sincere appreciation for making the JOURNAL possible.

The final task of converting the various manuscripts and the advertising plates into a magazine rests with our printer, Mr. Ovid Bell, of Fulton, Missouri, who, with his efficient staff have been doing this for us for over a decade. He is now printing four other state journals as well as a number of medical books, and we are fortunate to have the assistance of such a capable publisher, who is well versed in medical publications. Our relationship has been most cordial all ways.

A committee of the Commission on Society Organization is starting a study of the present status and the future of the JOURNAL, under the chairmanship of Dr. Marvin D. Snowbarger of Emporia. Any and all information we have is at his disposal, and I am sure that he or his committee members will be visiting with many of you about the JOURNAL. I hope that he will receive cooperation from all. We welcome this

study as a guide for our future planning. Until other instructions are given to us we will continue to try to make the JOURNAL as attractive and as informative as we can.

ORVILLE R. CLARK, M.D., *Editor*

Kansas Blue Shield

It is again my privilege to make a report, as the president of Kansas Blue Shield, to our sponsoring organization—the Kansas Medical Society. In this report I will try briefly to cover the highlights of Blue Shield's activities in the past year and discuss some of our future plans.

The past twelve months certainly could be described as the most active in the 21 year history of our organization.

1. We introduced the Prevailing Charge Plan.
2. We were selected as carrier for Medicare and developed Plan 65 to fill some of the gaps in coverage.
3. Planned a building addition.
4. Added 193 new employees.
5. Showed a gain of 33,000 new subscribers.
6. We worked with your officers to be named as carrier for Title XIX.

I will now discuss briefly the items I have just mentioned.

PREVAILING CHARGE PROGRAM

As you may remember, some three years ago in anticipation of Medicare, the Medical Society came to us and asked us to do away with fee schedules. We agreed that a fixed fee schedule type of payment was rapidly becoming outdated. We decided to experiment with a no fee schedule program. With the excellent cooperation of the physicians in Riley and Geary counties we started a local program. We learned a great deal from this study. Primarily that the physicians liked it, that it could be administered equitably and, most important, the public gave it excellent acceptance.

From this developed the Prevailing Fee Program in which each physician registered his individual charges. Of course the Blue Shield Board was somewhat dubious of what might happen when 650,000 subscribers were placed on this sort of program. We put great faith in the medical profession in the state and implemented the program.

So far I can report that the public response has been exciting. Some 93 per cent of those who have already been converted to new programs have adopted either full Prevailing Charges (about 60 per cent) or some form of shared deductible under Prevailing Charges. This means that only 7 per cent of the subscribers are electing to remain under the inadequate Schedule 1 contract. To us this bears out the fact that

the public will respond and pay substantially increased dues for a program which gives them predictability of benefits. When we come to the response of the physicians to the new programs, we are also greatly pleased. Over 96 per cent of the previously participating physicians have registered their charges with Blue Shield and are participating in the plan. Had there been a serious degree of nonparticipation in this new approach, we would not have implemented the program. In other words, even though we have abandoned fixed schedules as our principal method of payment, the strong support of the medical profession is an absolute essential in the success of Blue Shield. As we begin to administer this new program we are, of course, finding out that some policy questions are arising which will require careful attention and prompt solutions. It would be remarkable if we had been able to construct such a complex plan as this without having some questions still unresolved. Likewise it would have shown that we were not daring enough in our approach. We simply urge the profession to work with us and have some patience to give us an opportunity to study each new unsolved question so that the policy may be clarified. While we have this excellent beginning in the introduction of this new plan, its ultimate success will depend upon the care with which it is administered and the integrity of the profession. The Blue Shield Board has every confidence that the physicians of Kansas will do their part in delivering an economically feasible program to the people.

MEDICARE

I will not dwell in detail on Medicare at this time. All of us know pretty much what happened—that it was a complex program which descended upon the hospitals, the physicians and the administrative facilities of Blue Shield and Blue Cross with a minimum of preparatory lead time. A letter, to me, from Arthur E. Hess, Director, Federal Bureau of Health Insurance, dated April 4, 1967, may be of some interest. I quote:

In Kansas Blue Shield, the percentage of items returned to physicians or beneficiaries for more information was the lowest in the country, 3/10 of 1%; and the number of weeks of work on hand at the end of February also was a full half-week lower than the national average. We are gratified by the achievement of your Medicare operations as reflected in these two important indices.

We have no doubt that this record reflects, among other things, the good relationships which Kansas Blue Shield enjoys with the medical profession. Because we are administering Medicare in Kansas, the physicians have much more voice in its operation and

much better channels of communication. This is the reason the Medical Society urged us to take on this responsibility. While we want to do an efficient and effective job of administering Medicare for the government, we want you to realize that Blue Shield and its Board has not lessened its interests in our own programs. We want to carry out our obligations to the government, but our primary objective is still to *Protect the Voluntary Health Care System*.

TITLE XIX

The Board and staff of Blue Shield have spent considerable time and effort working with the Kansas Medical Society and Dr. McClure to secure a contract with the Department of Social Welfare to carry out the administrative functions under Title XIX. Again, this effort was made in the interest of serving the medical profession and the public through the avoidance of unnecessary duplication which would occur if two separate agencies administered Medicare and Title XIX.

We are now in the process of discussing contracts with the Department of Social Welfare and we hope that a good working relationship will be developed which will permit efficient administration of this new program. Obviously, just as in Medicare, there will be some delay before completely smooth working policies and methods are established, but we wish to assure you that Blue Shield will devote sufficient staff and skill to administer this program effectively. Meetings are being planned for your medical assistants to help them understand the new program and methods of reporting claims. We are sorry to say that the law itself will not permit a complete handling of these claims to the extent of Blue Shield sending you the actual checks in payment. Under the law it will be necessary for you to receive your checks directly from the State after Blue Shield has determined the amount payable.

I know that most of you realize how much work the executive committee of the Medical Society did for you this year. Dr. McClure and Oliver, along with Swede, worked hours in our behalf. They cooperated with the staff of Blue Shield and we supported them. If it were not for these efforts, I am sure that we would not have a Title XIX bill that is acceptable to the physicians of Kansas—and one that also lets the recipients receive good medical care. We all owe them our sincere thanks.

BLUE SHIELD'S FINANCIAL POSITION

It is pleasing to report that Blue Shield ended 1966 in a stronger financial position than in 1965. As of December 31, 1966, we had unencumbered reserves of \$2,977,648, or a reserve gain of nearly \$1,000,000.

The reserve amounts to about two and one-half months of case and operating expense.

PLAN 65

During recent meetings with the District Blue Shield Relations Committees the staff conducted an exchange of views with the physicians on these committees. The consensus of the physicians was that the major flaw in Plan 65 is the \$100 deductible on the 20 per cent Medicare coinsurance. The committees recommended that Plan 65 be changed to start paying the 20 per cent coinsurance on everything but home and office calls without applying the \$100 deductible.

Studies are now underway on Plan 65 to determine what problems need correction. It is too early for us to finalize plans in regard to Plan 65—supplemental coverage to Medicare—since Congress in all probability will make some changes in the law in the near future. I know that the Blue Shield Board, in cooperation with the Medical Society, will work out a better program and one that is easier for your aids and the patients to understand.

I should like to conclude my report with a brief discussion of two major considerations. First, a reinsurance to the medical profession that the physicians still have the major voice in the determination of Blue Shield policies. Occasionally those of us on the Board get the impression that some physicians feel that this is not still the case. You hear certain innuendos that Blue Shield has gone G.I.—Blue Shield has gone commercial—Blue Shield no longer represents the physicians' point of view—and other such remarks. I wish that it would be possible to find the time to show any individual physician who might feel this way how far from the fact it is. The procedure by which major policies are determined in Blue Shield has been carefully developed throughout the years, in cooperation with the Medical Society, and is still being followed explicitly. No major matter such as a new contract or a new and significantly different administrative procedure is embarked upon without final clearance by the Kansas Medical Society. For example, at this meeting you will be asked to request the Council to determine Blue Shield's role in connection with the verification of physicians' customary charges. I can say that the Blue Shield staff has been extremely careful and conscious of the need for proper clearance of policy questions.

There are 25 physicians and 14 laymen on the Blue Shield Board. Whenever the physicians feel that the Board does not reflect their proper interests, you have the power to elect new Board members. Each councilor district votes by mail ballot on its representatives to the Board. I would also like to say this—any physician who has a complaint, whether minor or

major, has direct access to me, to the Executive Committee and to the Board itself.

The other major point has reference to the future. The physicians of Kansas, and of the nation for that matter, are still primarily engaged in the private practice of medicine. True, there have been inroads and encroachments which have chipped away at some of our freedoms. But, by and large, our basic freedoms to accept a patient or not accept him, to treat him in the manner our best judgment directs us, have not been touched.

I know at the present time that my Medicare patients receive just as good care as the rest of my patients. When interference by any third party stops my ability to do this, I will have to stop taking care of that segment of the patients. Our primary responsibility is to deliver good care to our patients.

It is interesting to take a look at what we *do* have left in the voluntary system. The civilian population at the end of 1965 was 192 million. Subtract the following as not being likely prospects for the voluntary system:

population over 65	18	million
covered by public programs	13	million
other low income people	6.7	million
certain religious groups	1.3	million
Total	39	million

This leaves 153 million Americans who still can be sold on the voluntary health care system. One hundred forty-two million of these already have some form of voluntary insurance. Eleven million still need to be sold. The attitudes and efforts of the medical profession will have a significant bearing on which way this 153 million people go in health care.

Our greatest responsibility as physicians, members of the Medical Society, and as members and officers of Blue Shield is to *maintain the voluntary system of medical practice in this country*. I can assure you that our Board feels strongly on this subject and our primary efforts for the future are aimed at maintaining the voluntary system. If we can develop voluntary plans which are economical in a sense of representing true value, we can still keep the remaining 150 million Americans under the voluntary system. In order to do this we must have a consensus by the profession and Blue Shield on the goals to be established and the methods of carrying these out. In order to do this it will be necessary to work closely with the Medical Society. They must advise us. The job cannot be done unless both parties are going in the same direction. Our work plans for 1967-1968 call for a discussion of these mutual goals with you. We will have a seminar in the near future with the leaders of the medical profession in Kansas on "Developing

a Consensus on Blue Shield's Role in Helping the Profession Maintain the Voluntary System of Health Care."

Some of you may have read the Millis report brought out by the AMA in the past year. To quote: "The health and medical aspirations of the nation, like other national goals, are largely determined outside of medicine. If you don't serve the public as it needs to be served, the public will force changes in the profession." Let us be farsighted enough in planning medical care of the future for citizens of Kansas that, by working together, the Kansas Medical Society and Kansas Blue Shield can plan and mold these changes in the manner which we think is best, instead of having it dictated by outside forces.

ROBERT K. PURVES, M.D., *President*

Dr. James A. McClure, President, explained his work with Welfare and the legislature, relating to the Kansas implementation of Title XIX. He distributed copies of the following letter sent to him by Mr. Robert A. Anderson, chairman of the State Board of Social Welfare.

April 27, 1967

Mr. James A. McClure, M.D.
President
Kansas Medical Society
Medical Plaza Building
Topeka, Kansas

Dear Jim:

After discussing the matter with the other members of the Board of Social Welfare, I am hereby making you the following assurance:

- (1) The State Board continues to support the preliminary plan which you reviewed in January of 1967 along with our staff and the federal people.
- (2) State Board continues to support the payment of reasonable, usual and customary charges as stated in House Bill 1608.
- (3) As provided in House Bill 1608, we intend to make an all-out effort to obtain a satisfactory contract with Blue Cross-Blue Shield for fiscal intermediary services.
- (4) From time to time as our Title XIX plan is being completed there will be manual material and other things that might affect the Kansas physician. You may be assured that at each step of the proceedings your Society will be contacted and given a chance to review the material.

Sincerely,
(Signed)
Robert A. Anderson
Chairman
State Board of Social Welfare

SECOND SESSION

Dr. Thomas F. Taylor, Speaker, convened the House of Delegates briefly at the general luncheon on Tuesday, May 2, for the purpose of introducing the amended By-Laws to the House. The reference committee recommended a number of changes in the document submitted by the Commission on Society Organization. Since the present By-Laws require proposed amendments to be introduced one day before action can be taken this special meeting was called to fulfill that requirement.

The Speaker called for introduction of resolutions.

Dr. William Roy, chairman of the reference committee to which Resolution No. 15 had been referred, stated his committee directed him to divide this resolution in two parts. Resolution No. 15-1 was the revised Constitution and unaltered. Resolution No. 15-2 is the revised By-Laws. He placed before the House Resolution No. 15-2 as amended by the reference committee.

The Speaker re-referred Resolution No. 15-2 to the reference committee and invited interested physicians to examine the document prior to the Wednesday session.

The meeting was then adjourned to reconvene at 2:00 p.m. on Wednesday, May 3.

THIRD SESSION

The third session of the House of Delegates convened at the Town House Hotel, Kansas City, Kansas, on Wednesday, May 3, 1967, at 2:00 p.m.

Dr. Thomas F. Taylor, Speaker, called the meeting to order and ballots were distributed for the election of all Society officers.

Dr. George Wolf, dean of the School of Medicine, spoke on regional planning, explained the medical center has received two grants, one for study and one for \$1.7 million for two years to initiate the program. He stated that he wanted this program to be continually reviewed by a committee from the Medical Society and that it would also be reviewed by a larger advisory committee, then by the state advisory committee for final approval.

The tellers reported the results of the election as follows:

PRESIDENT-ELECT: John L. Morgan, M.D., Emporia

FIRST VICE PRESIDENT: Leland Speer, M.D., Kansas City

SECOND VICE PRESIDENT: J. Gordon Claypool, M.D., Howard

SECRETARY: Francis T. Collins, M.D., Topeka

TREASURER: John L. Lattimore, M.D., Topeka

AMA DELEGATE: John C. Mitchell, M.D., Salina

AMA ALTERNATE DELEGATE: William J. Reals, M.D., Wichita

SPEAKER: Thomas F. Taylor, M.D., Phillipsburg

VICE SPEAKER: J. Walker Butin, M.D., Wichita

The caucus of the Council districts announced the election of the following to serve as councilors from their respective districts:

District No. 2: James G. Lee, Jr., M.D., Kansas City

District No. 4: W. G. Rinehart, M.D., Pittsburg

District No. 11: Ernest W. Crow, M.D., Wichita

District No. 13: Eugene T. Siler, M.D., Hays

District No. 14: Marvin O. Steffen, M.D., Great Bend

District No. 15: Richard H. Hill, M.D., Meade

The results of the election of the Nominating Committee were reported as follows: Dr. George E. Burket, Jr., Kingman, Chairman; Drs. Thomas P. Butcher, Emporia; Murray C. Eddy, Hays; Norton L. Francis, Wichita; and Laurence S. Nelson, Salina.

Dr. McClure spoke briefly on Title XIX and the work of the Legislature. He asked the Society to have patience with Welfare because he believed they were serious in trying to inaugurate this program in a manner suitable to physicians. He referred again to the letter from Mr. Anderson (*see* First Session) and read the following memorandum received this morning (May 3) from the State Department of Social Welfare:

This is written pursuant to the letter of April 27 from Mr. Robert Anderson, Chairman of the State Board of Social Welfare. In preparing plans covering medical services under Title XIX it will be necessary to make numerous additions and revisions to the present state uniform medical program. It will be of great benefit to the staff of this division in drafting the program if we might have consultation with a committee from each respective group providing medical service under the new plan. This same committee could likewise be helpful in reviewing and evaluating the program from time to time after we have had experience with it.

Toward this end we would welcome the selection and cooperation of such a committee from the Kansas Medical Society.

In making this suggestion it must be stated that under the duties imposed upon the administering agency by the Kansas statutes and the Federal Department of Health, Education and Welfare the State Department of Social Welfare cannot transfer its responsibility or surrender its prerogatives. This obligation, however, need not interfere with the mutual benefits derived from the above proposal.

The speaker then declared Dr. George F. Gsell to be the President of the Kansas Medical Society and invited him to speak.

Dr. Gsell said he recognized a number of major problems confronting the Society. The first related to the University of Kansas Medical Center in which the programs of undergraduate and postgraduate education and the new Heart, Cancer, Stroke program needed much attention and close cooperation from the Society.

Regarding Blue Shield, the usual and customary fee concept, new products and the Titles XVIII and XIX of the Medicare program for which Blue Shield will be intermediary, all need Society attention and cooperation.

The Board of Health will direct the Comprehensive Health Planning Program. It is urgent the Society expand its ties with the Board of Health and assist that agency in the definition of proper public health activities.

Welfare is another major problem. A continuing step-by-step program which will require the constant attention of the Society. He officially requested Dr. McClure to continue his services to the Society on matters relating to Title XIX.

Dr. Gsell expressed his hope that the commission system may continue to receive the support of the Society. He announced that the commissions had been appointed, and read the names of the chairmen.

Dr. Gsell also expressed his hope that communications can be improved by means of the JOURNAL, by letters, and through the Council district meetings. He then announced that the Council would hold a brief meeting in the State Room immediately upon adjournment.

SPECIAL REPORT

Woman's Auxiliary

Mr. Speaker, Dr. McClure, Dr. Gsell, Officers, Delegates and guests:

It is with pleasure that I report to you the activities of the Woman's Auxiliary to the Kansas Medical Society this past year.

Last May 20 and 21, Mrs. E. Burke Scagnelli and I attended the AMPAC workshop in Washington, D. C. 1966-67 saw an increased membership in KaMPAC-AMPAC. Early in the Auxiliary year many of our members were actively involved in candidate support committees. Under the guidance of our state legislative chairman, Mrs. Warren Meyer, more of our county auxiliaries have made active efforts to awaken our medical community leaders to more active interest in, and participation in, the political scene. Mrs. Meyer has worked closely with the KaMPAC Board and with Dr. McClure and his legislative committee.

Our Auxiliary had a full delegation of five women attending the meeting of the Women's Auxiliary to

the American Medical Association in Chicago in June.

We chose to give special emphasis to four phases of our total Auxiliary program this year: AMA-ERF, Legislation, Health Careers and International Health. Other phases of our program were not neglected, however, throughout the year.

At our Fall Conference in Protection, our workshops were concerned with these four areas and we used one of the new "Package Programs" prepared by our National Auxiliary officers concerning the widespread gain of Venereal Diseases among teenagers. As a result, many county auxiliaries sponsored the showing in their communities of two films from this package, "Dance Little Children" and "A Quarter Million Teenagers."

In October, Mrs. Ernest Neighbor and I attended National Fall Conference in Chicago. Following the conference, six of our state chairmen joined us in Chicago to attend the second annual Regional Workshops sponsored by the National Auxiliary and the AMA. This workshop proved to be an inspiration to those women to come back to Kansas and put forth a little more effort, to push our Auxiliary programs.

Our President and President-Elect attended a total of nine district meetings and nine county meetings.

We are happy to report that our Auxiliary has raised approximately \$9,000 for AMA-ERF, which is \$4,000 above last year's contribution.

The visits of Dr. Jim Turpin to Kansas, and particularly to Wichita, have spurred on our work in International Health. Our state chairman, Mrs. W. G. Cauble has reported a total of 22,000 pounds from Kansas this year to Project Concern, World Medical Relief, Christian Medical Society and Dr. Mathew, Dr. Gough, and Dr. Medecke. This included knitted leper bandages, bandages from sheets, hygiene kits, Johnny coats for hospital gowns, old eye glasses, disposable syringes and other such materials. Three hundred and five dollars in cash was contributed.

Other community groups have become interested in our International Health program and we are receiving material from church groups, Scouts, Home Demonstration Units and Business and Professional Women. This has been one of our most successful public relations projects. If you doctors have any used instruments or equipment which you would like to contribute to this project, please contact Mrs. W. G. Cauble of Wichita.

We have at least 17 Health Careers, eight Future Nurses and one Future Doctors clubs in our state. Sponsored student tours to the University of Kansas Medical Center, big city hospitals and the Kansas State Health Museum at Halstead have aroused interest in Health Careers.

The climax of our year's work came with the organization of our newest auxiliary, the Southwest

Kansas Auxiliary, which is composed of members in all counties of the 17th District. They have 20 charter members.

We were honored and privileged to have as our guest at our State Convention May 1 and 2, 1967, Mrs. C. C. Long, of Ozark, Arkansas, our National First Vice President.

This completes a brief summary of our year's work. Thank you.

MRS. LYLE G. GLENN, *President*

RESOLUTION NO. 1

School Health

WHEREAS, There is apparent need by the public for knowledge of health is evidenced by the rate of self-medication, the flourishing of quackery, the abuse of drugs and many bewildering news stories. The Kansas Medical Society believes that the education of the public as it comes through the school systems should include superior health education. Such instruction would also stimulate interest in health careers critically related to the current health manpower crisis; and

WHEREAS, Kansas schools presently require only an optional one-half unit of health education; therefore be it

Resolved, That the Kansas Medical Society take positive action in promoting the teaching of health:

1. By creating a conference on health education with the State Board of Regents, the deans of the Departments of Education, Health and Physical Education from the colleges of Kansas, the School of Medicine and the State Department of Health.

2. By promoting through the Education Committees of the House and Senate the requirement of one full credit of health studies before graduation from the secondary schools.

3. That Kansas Medical Society members promote this interest locally through the school boards, local school administrators and friends in the Legislature.

RESOLUTION NO. 2

Resolution No. 2 relating to medical licensure was tabled.

RESOLUTION NO. 3

History Prizes

WHEREAS, For several years the Kansas Medical Society has offered a prize of \$100 for the best paper on the history of Kansas Medicine, written by a student at the University of Kansas School of Medicine,

the committee wishes to enlarge the scope of this prize by opening it to students of all Kansas colleges and junior colleges and by increasing the prize to \$250, first prize, and \$100, second prize. Therefore, be it

Resolved, That the Kansas Medical Society may offer a prize of \$250 and \$100 to any student in a Kansas college or junior college for the best and second best paper on the History of Kansas Medicine.

RESOLUTION NO. 4

Resolution No. 4, a statement expressing ideals for the practice of Medicine was not adopted.

RESOLUTION NO. 5

Highway Accidents

WHEREAS, The Congress passed the Highway Safety Act of 1967, which will soon be implemented in Kansas; and

WHEREAS, This law recommends "the state shall give its State Health Agency the responsibility and authority necessary to ensure that persons injured in highway accidents in any and all of its jurisdictions receive prompt emergency medical care of a quality equal to the best that can be provided by modern Medicine under the range of emergency conditions encountered"; and

WHEREAS, The physicians of Kansas have a vital interest in highway safety; therefore be it

Resolved, That the House of Delegates support in principle such legislation and endorse the State Board of Health as the Official State Agency to implement this program; and be it further

Resolved, That the Council be directed to offer to the State Board of Health the service of the Kansas Medical Society in developing this program and in its operation.

RESOLUTION NO. 6

Blue Cross-Blue Shield

WHEREAS, The 1967 Kansas Legislature adopted House Concurrent Resolution No. 1031, directing the Legislative Council to study the operations of non-profit hospital and medical service corporations, to consider whether additional public representation is desirable and to examine their relationships with the government because of their service and intermediary in federal programs, and to report recommendations to the 1968 Legislature; therefore be it

Resolved, That the Council is directed to cooperate with Kansas Blue Cross-Blue Shield and offer to the Legislative Council the services of this Society in the conduct of its investigation.

RESOLUTION NO. 7

Home Nursing Care

WHEREAS, The Congress enacted PL 89-97, in which provision is made to pay for home nursing care for beneficiaries under Title XVIII and Title XIX; and

WHEREAS, The 1967 Kansas Legislature implemented Title XIX through the passage of HB-1608; and

WHEREAS, The 1967 Kansas Legislature enacted HB-1603, authorizing county health departments to establish programs of home nursing service; therefore be it

Resolved, That the Council is directed to offer to the State Board of Health the services of this Society in the development and in the operation of this program; and be it further

Resolved, That the Council advise the component medical societies of this state upon ways in which they may perform a similar service with regard to their county health department.

RESOLUTION NO. 8

Comprehensive Health Planning

WHEREAS, The Congress enacted PL 89-749, requiring each state to designate an Official State Agency to conduct comprehensive health planning within the state, and

WHEREAS, The 1967 Kansas Legislature enacted HB-1568, designating the Kansas State Board of Health as the "sole and official state agency to administer the state's comprehensive state planning functions"; and

WHEREAS, This new program may have great significance to the practice of Medicine; therefore be it

Resolved, That the Council is directed to offer to the State Board of Health the service of the Kansas Medical Society in the development and in the operation of the Comprehensive Health Planning Program.

RESOLUTION NO. 9

Relations With Religion

Be It Resolved, That the sum of Five Hundred Dollars (\$500) be available to the Committee on Relations with Religion for the purpose of furthering their program.

RESOLUTION NO. 10

Microfilming of Records

Be It Resolved, That the issues of the JOURNAL and minutes of the House of Delegates be microfilmed.

RESOLUTION NO. 11

**(Adopted at the First Session, Sunday,
April 30, 1967)**

Resolution No. 11 was an expression of appreciation to the staff of the Executive Office for the work they had done during the past year.

RESOLUTION NO. 12**Council District Meetings**

Be It Resolved, That Council District meetings be scheduled by the Executive Office to improve efficiency of the officers' time.

RESOLUTION NO. 13**House of Delegates Action**

Be It Resolved, That the preparation of summaries of House of Delegates action be continued.

RESOLUTION NO. 14**Council Actions**

Be It Resolved, That a summary of the actions of the Council meetings be published in the JOURNAL.

RESOLUTIONS NO. 15-1 and 15-2

Resolution No. 15-1, the revised Constitution, and Resolution No. 15-2, the revised By-Laws, were adopted and will be published later.

RESOLUTION NO. 16**Title XIX Fiscal Intermediary**

WHEREAS, The 1967 Kansas Legislature enacted a law to implement Title XIX in Kansas; and

WHEREAS, This law authorizes the State Board of Social Welfare to negotiate with a fiscal intermediary; and

WHEREAS, It was the expressed intent of the legislature that the intermediary for Title XIX should be the same as the intermediary for Title XVIII; and

WHEREAS, The above will require regular communication between the medical profession and the Department of Social Welfare; therefore be it

Resolved, That the president request the chairman of the Commission of Socio-Economic Study or his designate to assist him in conferences with Kansas Blue Shield and the State Department of Social Welfare toward the end that a proper and workable contract between those agencies may rapidly be achieved.

RESOLUTION NO. 17

Similar in content and was incorporated into Resolution No. 16. Therefore, Resolution No. 17 was not adopted.

RESOLUTION NO. 18**Social Security Amendments of 1967**

WHEREAS, There is before the consideration of Congress HR 5710, the Social Security Amendments of 1967; and

WHEREAS, Section C of this bill would amend the Medicare Act to make payments to pathologists and radiologists under Part A; and

WHEREAS, This would in effect impose the Douglas Amendment into the Medicare Program, virtually requiring pathologists and radiologists to be in the employ of hospitals; therefore be it

Resolved, That the Kansas Medical Society reaffirm its previous position that pathologists and radiologists are Doctors of Medicine and that payment for their services should not be assessed against funds designated for hospital care; and be it further

Resolved, That Section C of HR 5710 be opposed and that this Society make every possible effort to influence the Congress to remove that provision of the bill.

RESOLUTION NO. 19**AMA-ERF**

WHEREAS, A sum of money is annually contributed to the University of Kansas School of Medicine representing contributions through AMA-ERF; and

WHEREAS, A portion of this money is annually designated into the Student Loan Fund at the University of Kansas School of Medicine; therefore be it

Resolved, That the chairman of the Committee on Endowment and one other member of the Society, to be designated by the president, shall be directed to meet annually with the dean of the School of Medicine and to report to the Society upon the services AMA-ERF contributions have been to the University.

RESOLUTION NO. 20**Medical Student Loan Fund**

WHEREAS, The American Medical Association Student Loan Program carries an interest rate on loans considerably in excess of the interest charges made against the Student Loan Fund from the University of Kansas; therefore be it

Resolved, That the Kansas delegates to the American Medical Association House of Delegates be directed to prepare and introduce before the House of Delegates of the American Medical Association a resolution requesting the American Medical Association to re-examine its Student Loan Fund in an attempt to reduce the interest rate charged by banks.

RESOLUTION NO. 21**Medical-Legal Conference**

WHEREAS, The American Medical Association and the American Bar Association have held a number of jointly sponsored Medical-Legal Conferences; and

WHEREAS, The Kansas Bar Association has invited the Kansas Medical Society to jointly sponsor a one-day statewide Medical-Legal Conference; therefore be it

Resolved, That the Kansas Medical Society accept this invitation and participate in a Medical-Legal Conference this coming year.

RESOLUTION NO. 22**KaMPAC Board of Directors**

WHEREAS, After five years' experience in operation of KaMPAC there is a feeling by the board members that a different method of the appointment of the KaMPAC board should be provided; and

WHEREAS, There is no close association at the present time of the appointed board members with the organization of the Kansas Medical Society; therefore be it

Resolved, That the KaMPAC board be enlarged to consist of three physicians and one member of the Auxiliary from each congressional district and they shall be appointed on the recommendation of the councilors from the respective districts by the Council; and be it further

Resolved, That the chairman of the board be appointed at large by the president of the Kansas Medical Society, with approval of the Council.

RESOLUTION NO. 23**Economy in Health Care**

WHEREAS, Inflation, justifiable demands by nurses and other workers in the health care industry for more equitable remuneration, demands of the people for more and more health care, increasingly keen competition for health personnel at a time when there are shortages of personnel in many fields, new pressures on already heavily burdened health care facilities induced by government programs and numerous other economic pressures are forcing upward the costs of most consumer goods and services, including health care; and

WHEREAS, The economic pressures which are influencing this inflationary trend are beyond the ability of individual citizens to stop; and

WHEREAS, Conscientious physicians long have recognized their moral obligation to serve the economic interests of their patients as well as their medical needs; therefore be it

Resolved, That this House of Delegates of the Kansas Medical Society urge physicians to do everything possible to help the public conserve its health care dollars; and be it further

Resolved, That physicians continue to act in a variety of ways to enlarge their responsibility to help their patients save money by exercising moderation, tempered by medical necessity, in ordering laboratory procedures; avoiding hospitalizations which are primarily for the convenience of the patient; making certain that the least expensive drugs are prescribed if a choice is clearly available and the efficacy of the drugs are similar; helping patients to interpret hospital charges; pointing out the advantages of voluntary health insurance; counseling patients on healthful patterns of living and explaining other ways of reducing health care costs; and be it further

Resolved, That the delegates from Kansas be instructed to submit this resolution to the House of Delegates of the American Medical Association at its convention in Atlantic City in June, 1967, and that the delegates of Kansas shall do whatever is in their power to assure its adoption.

RESOLUTION NO. 24

**(Adopted at the First Session, Sunday,
April 30, 1967)**

W. Clarke Wescoe, M.D.

WHEREAS, W. Clarke Wescoe, a member of the Kansas Medical Society, has served this Society and American Medicine in many distinguished areas; and

WHEREAS, His tenure on the Council of Medical Education of the American Medical Association of which he is chairman will be concluded this June; therefore be it

Resolved, That the Kansas Medical Society express its sincerest gratitude to Doctor Wescoe for his exceptional contributions to Medical Education and to education generally; and be it further

Resolved, That the president of this Society be instructed to send a copy of this resolution to Doctor Wescoe with an expression of best wishes toward his continued successful service.

RESOLUTION NO. 25**Crippled Children**

A substitute resolution was adopted:

That Resolution No. 25 be referred to the appropriate commission for further study with a recommendation to report back to the next annual session of the House of Delegates.

RESOLUTION NO. 26

(Adopted at the First Session, Sunday,
April 30, 1967)

James A. McClure, M.D.

WHEREAS, James A. McClure, M.D., has served the Kansas Medical Society as its president during the year just past; and

WHEREAS, Doctor McClure has devoted many hours of his personal time away from his family and practice in furtherance of the goals of the Kansas Medical Society; and

WHEREAS, Doctor McClure has demonstrated great statesmanship in guiding important legislation in its development through the Kansas Legislature; and

WHEREAS, Doctor McClure has served the Kansas Medical Society above and beyond the call of duty; therefore be it

Resolved, That the Medical Society of Sedgwick County requests that a formal expression of gratitude be made to Doctor McClure for his devoted leadership and outstanding service to the Kansas Medical Society; and be it further

Resolved, That this resolution be made a permanent part of the official minutes of this Society; and be it further

Resolved, That a copy of this resolution be presented to Doctor McClure.

RESOLUTION NO. 27

Resolutions No. 27, 31 and 32 were combined. Resolution No. 27 was not adopted.

RESOLUTION NO. 28**Amendments to K.S.A. 39-702**

WHEREAS, House Bill No. 1608, as amended, provides (page 11, lines 24-28), "The State Board shall take such action as may be necessary to assure that licensed practitioners within the scope of their practice as defined by state law who provide professional services under the provisions of the Federal Social Security Act shall be paid their reasonable, usual and customary charges"; and

WHEREAS, House Bill No. 1608 also provides (page 9, lines 27-31; page 10, lines 1-4), "The State Board of Social Welfare in developing any such plan, may enter into an agreement with an agent or intermediary, for a term of not less than three (3) years, for the purpose of performing certain functions, including the making of medical payment reviews, determining the amount due the medical vendors from the state, in accordance with standards set by the State Board, preparing and certifying to the State Board lists of medical vendors and the

amounts due them, and other related functions as determined by the Board"; and

WHEREAS, The Board and the Department of Social Welfare have assured the Kansas Medical Society in writing of their desire and intention to adhere to the principles set forth in the preliminary plan; therefore be it

Resolved, That this House of Delegates indicate its acceptance of the enabling legislation contained in House Bill No. 1608 as it pertains to physicians and the preliminary stage of the plan for implementing Title XIX in Kansas; and be it further

Resolved, That the Executive Committee and the Council be supported by the Kansas Medical Society in its negotiations with the Department of Social Welfare.

RESOLUTION NO. 29

Resolution No. 29 on direct billing under Title XIX was not adopted.

RESOLUTION NO. 30

Resolution No. 30, to give the Kansas Allergy Society a delegate was accomplished in Resolution No. 15-2. Therefore, Resolution No. 30 was not adopted.

RESOLUTION NO. 31**Liaison Committee With Board of Social Welfare**

WHEREAS, The final Kansas Plan for implementation of the medical care provisions of Title XIX are not available to us and will be developed in stages; and

WHEREAS, Successful operation of the medical care provisions of the Kansas plan for implementation of Title XIX of the federal Social Security Act will require some uniform and fair method of resolving any matters of conflict between *individual* or groups of physicians and the Department of Social Welfare and/or its fiscal intermediary; therefore be it

Resolved, That the Kansas Medical Society, through its House of Delegates, establish a working liaison committee of the Society composed of not less than seven (7) members appointed by the president with approval of the Executive Committee, representing major fields of practice or specialization, the specific task of such committee to become knowledgeable in Title XIX and the seeking out, receipt, review, analysis, and recommendation of a fair and impartial resolution in matters of conflict between *individual* or groups of physicians and the Department of Social Welfare and/or its fiscal intermediary arising from the provision of medical services or reimbursement related thereto; and be it further

Resolved, That this committee shall meet on call

of the president at its earliest convenience and elect a chairman who shall report all actions taken by the committee to the Executive Committee of the Society at each of its meetings; and be it further

Resolved, That the Board of Social Welfare or the fiscal intermediary be requested to submit problems to this working liaison committee for recommendations before restrictive or punitive action is taken against any physician regarding services he has rendered to recipients under Title XIX; and be it further

Resolved, That the medical consultant, or consultants, to the Board of Social Welfare shall have ex-officio membership on this committee.

RESOLUTION NO. 32

Resolution No. 32 was combined with Resolutions No. 27 and 31. Therefore, Resolution No. 32 was not adopted.

RESOLUTION NO. 33

Verification of Professional Charges

WHEREAS, It is important to the maintenance of the private practice of Medicine and the Voluntary Prepayment System supporting it that the public have confidence in prepayment programs providing benefits based upon usual and customary professional charges; and

WHEREAS, The basic premise of all prepayment programs based upon the payment of usual and customary professional charges is that Doctors of Medicine make customary charges to the vast majority of patients irrespective of their method of payment; and

WHEREAS, It is the responsibility of the Medical Profession to establish reasonable methods of demonstrating the validity of this premise, thereby providing for the maintenance of public confidence; therefore be it

Resolved, That the Council of the Kansas Medical Society be directed to study and develop various methods for verifying customary professional charges as may be considered appropriate and adequate to:

A. Provide demonstration to the public that customary professional charges are being made in respect to prepayment plans.

B. Satisfy state and federal governmental agencies in-

involved in paying medical benefits that proper charging methods are being employed; and be it further

Resolved, That when such methods of verification have been developed, a full description of these methods be sent to all component societies of the Kansas Medical Society, all individual members of the Kansas Medical Society, and all Specialty Societies. Final action can be taken with approval of the House of Delegates.

RESOLUTION NO. 34

Appreciation to Wyandotte-Johnson Counties

WHEREAS, The Kansas Medical Society wishes to extend their heartfelt thanks to these two societies and to Mrs. Martha Hunt, Executive Secretary of the Wyandotte County Medical Society, for a job well done in making arrangements for the meeting; therefore be it

Resolved, That this House of Delegates herewith express its appreciation for the warm hospitality they received at this 108th annual session.

RESOLUTION NO. 35

Physicians and Hospital Boards of Trustees

WHEREAS, The American College of Surgeons, in a policy statement, urges medical staff members to serve on hospital governing boards; and

WHEREAS, The Kansas Medical Society believes that it is in the best interest of the patient and the hospital that members of the medical staff serve on the governing boards of hospitals with full voting privileges and terms of office assuring proper rotation; therefore be it

Resolved, That the Kansas Medical Society urge individual members to initiate through their own hospital medical staff organizations appropriate action; and be it further

Resolved, That the Kansas Medical Society notify the Kansas Hospital Association of such action and urge cooperation of that organization and its members; and be it further

Resolved, That the Kansas Medical Society instruct the Commission on Health Service to urge the Kansas Hospital Advisory Council to adopt this policy.

Report of Council

Summary of Meeting Held on May 3, 1967

(Action taken by the House of Delegates dictates that a summary of Council meetings be published in the JOURNAL.)

The Council met on Wednesday, May 3, 1967, at the Town House Hotel, Kansas City, Kansas, beginning at 5:15 p.m., immediately upon adjournment of the House of Delegates. Officers present were: Dr. George F. Gsell, President; Drs. James A. McClure, John L. Morgan, Leland Speer, J. Gordon Claypool, Francis T. Collins, and John L. Lattimore.

The following councilors were present: Drs. Dan L. Berger, Virgil E. Brown, Richard F. Conard, Ernest W. Crow, Richard H. Hill, Robert W. Hughes, Robert C. Lawson, James G. Lee, Jr., J. J. Marchbanks, Spencer C. McCrae, W. G. Rinehart, Alex Scott, Eugene T. Siler, Bruce G. Smith, Marvin O. Steffen and F. P. Wolff.

Also present were: Drs. J. Walker Butin, J. Warren Manley, William J. Reals, Thomas F. Taylor, Hoyt C. Blaylock, Thomas P. Butcher, Kenneth L. Graham, Robert K. Purves, Mr. R. G. "Swede" Swenson and Mr. Oliver E. Ebel.

Dr. Gsell read a letter from Dr. Dwight Lawson, Chief Medical Consultant for Disability Determinations Unit of the Division of Vocational Rehabilitation, declaring that:

The Kansas State Board for Vocational Education, Division of Vocational Rehabilitation at its February 17, 1967, meeting approved a change in the fee schedule for the Vocational Rehabilitation Division of usual and customary fee, not to exceed \$5.00 per point based on the 1966 Relative Value Schedule, effective on or about July 1, 1967.

It was expressed that the Society desires to eliminate the use of fee schedules either for fixed amounts or by way of conversion factors utilizing the Relative Value Scale in favor of usual and customary fees. A motion was made and seconded that the Society thank Dr. Lawson for his tremendous effort in behalf of the Society in his work with the Vocational Rehabilitation program.

A motion was made and seconded that the Society sponsor a page in the 1967 edition of *Jayhawker M.D.* and reprint the Hippocratic Oath, at a cost of \$95.

The Council appointed Drs. Richard Greer and Orville R. Clark each for a new three-year period on the Editorial Board and named Dr. Clark editor.

Annually, the Council nominates physicians to the Blue Cross Board. This board consists of 12 physicians in addition to other persons. The terms of four physicians expire each year. Two are eligible for reappointment. Drs. H. Preston Palmer, Scott City, and Marvin R. Gunn, Salina, were reappointed. Two other physicians whose terms expire are ineligible for reappointment. Sometime ago, county medical societies were requested to submit nominations. Ten such nominations were received. The council considered these, nominated four from that list and then Drs. John O. Baeke, Overland Park, and John W. Travis, Topeka, were nominated for a first term.

The President announced that each year a representative from the Council is appointed to consult with the Kansas Chapter of the Student American Medical Association (SAMA). Last year Dr. Leland Speer served in this capacity. A motion was made and seconded that Dr. Speer be reappointed.

Dr. Speer then announced that last year the Council contributed the expense money to send the president of the Kansas SAMA Chapter to the national convention. This year, the convention is in Chicago and through the ability of some to obtain free housing it is possible for five SAMA members to travel by car and attend the convention for a total cost of \$75. Dr. Speer then made a motion, which was seconded, that the Society contribute \$75 to pay the expenses of five Kansas students to the national SAMA convention.

Dr. Francis Collins, chairman of the Advisory Commission to Selective Service, stated it is his duty to have a committee consisting of physicians in various areas of the state to assist him in considering medical deferments. In the past, the elected councilors have served in that capacity. He asked the Council to reaffirm that the 18 councilors will serve as his advisory committee. A motion to this effect was seconded and carried.

Dr. Gsell next discussed the scheduling for next year's Council district meetings. He explained he

wished to assure everyone he did not want to force such a meeting upon any councilor but that scheduling could make travel and time more convenient than it had been in the past. He stated that some suggestions would be sent out in the near future but hoped each councilor would express himself freely if the suggested date was not satisfactory.

Dr. Gsell explained that the next meeting of the Council probably would be held on the Sunday im-

mediately preceding the opening of the South-West Clinical Society.

Dr. McClure asked whether the Council would wish to authorize a letter to the State Board of Social Welfare thanking them for their cooperation, for the correspondence they had sent, and for the assurances the Medical Society had received that they would continue to cooperate. This was authorized and the President was directed to write such a letter.

Commissions, 1967-68

EDUCATION

William R. Roy, Chairman—302 Medical Plaza Building, Topeka 66604; Phone: 913 CE 5-5353.

M. S. Allen, Kansas City; C. V. Black, Pratt; D. B. Foster, Topeka; E. S. Gendel, Topeka; R. H. Greer, Topeka; C. C. Gunter, Quinter; J. H. Holt, Wichita; H. P. Jubelt, Manhattan; T. J. Luellen, Wichita; G. D. Marshall, Colby; R. R. Melton, Marion; J. G. Phipps, Wichita; J. D. Rising, Kansas City; Alex Scott, Junction City; I. J. Waxse, Oswego; R. W. Weber, Salina; Sam Zweifel, Kingman.

HEALTH SERVICES

Hoyt C. Blaylock, Chairman—1010 Brown Building, Wichita 67202; Phone: 316 AM 7-1271.

G. L. Ashley, Chanute; F. C. Beelman, Topeka; V. E. Brown, Sabetha; T. P. Butcher, Emporia; A. C. Cherry, Topeka; W. M. Cole, Wellington; G. W. Fields, Scott City; S. E. Hershorn, Wichita; M. R. Knapp, Wichita; C. T. McCoy, Wichita; E. G. Neighbor, Kansas City; G. K. Palmer, Salina; L. W. Patzkowsky, Kiowa; D. V. Preheim, Newton; E. J. Ryan, Emporia; J. M. Stein, Topeka; W. P. Williamson, Kansas City.

SCIENTIFIC STUDY

David E. Gray, Chairman—302 Medical Arts Building, East, Topeka 66604; Phone: 913 CE 3-1304.

L. P. Cawley, Wichita; J. C. Dowell, Salina; R. L. Dreher, Salina; H. W. Floersch, Kansas City; R. G. Heasty, Manhattan; J. E. Hill, Arkansas City; J. W.

Jacks, Pratt; N. M. Jenkins, Salina; R. C. Knappenberger, Wichita; C. M. Lessenden, Topeka; B. M. Matassarini, Wichita; V. R. Moorman, Hutchinson; F. C. Newsom, Wichita; W. M. Nice, Topeka; O. Vale Page, Plainville; R. H. Robinson, Wichita; D. W. Selzer, Topeka; L. E. Woodard, Wichita.

SOCIETY ORGANIZATION

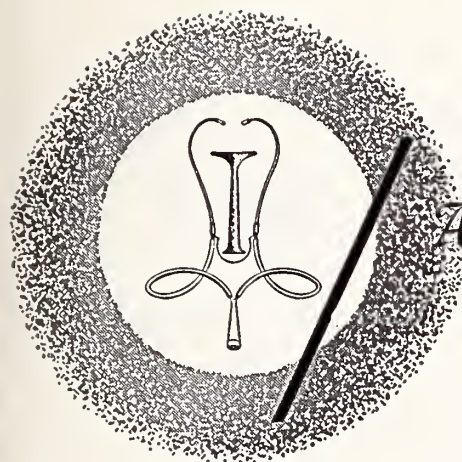
James G. Lee, Jr., Chairman—155 South 18th, Kansas City 66102; Phone: 913 DR 1-2330.

H. L. Bogan, Baxter Springs; C. C. Conard, Dodge City; V. M. Eddy, Hays; N. D. Harris, Liberal; R. C. Long, Norton; D. L. Marchbanks, Salina; G. R. Maser, Mission; R. P. Norris, Wichita; J. L. Perkins, Hutchinson; G. R. Peters, Kansas City; W. J. Reals, Wichita; V. D. Schwartz, Wichita; D. J. Smith, Overland Park; N. C. Smith, Arkansas City; M. D. Snowbarger, Emporia; W. C. Swisher, Wichita; W. O. Wallace, Atchison; R. P. Woods, Topeka.

SOCIO-ECONOMIC STUDY

Kenneth L. Graham, Chairman—Medical Arts Building, Leavenworth; Phone: 913 MU 2-5815.

J. N. Blank, Hutchinson; C. W. Bowen, Topeka; H. T. Gray, Wichita; O. L. Hanson, Topeka; R. W. Hughes, Lawrence; T. C. Hurst, Wichita; G. B. Joyce, Topeka; W. R. Lentz, Topeka; J. A. McClure, Topeka; S. C. McCrae, Salina; H. O. Marsh, Wichita; L. W. Reynolds, Hays; J. L. Salomon, Wichita; E. B. Scagnelli, Dodge City; B. E. Stofer, Wichita; G. R. Stone, Manhattan; J. W. Travis, Topeka; E. R. Williams, Dodge City.



Announcements

Professional meetings, conferences, and postgraduate courses of national importance are listed for the Doctor's Calendar. Notice of the session is posted in advance to allow the physician time to make preparations.

The cooperation of physicians is requested in the continuing study of Epidermolysis Bullosa Fetalis, including therapy in newborns with this fatal disorder, being conducted by the Pediatric Pharmacology Unit and the Birth Defects Center at Children's Memorial Hospital, University of Oklahoma Medical Center, Oklahoma City.

Referral of such patients is needed. In most cases, arrangement for hospitalization without cost to the family can be made. Physicians interested in having patients considered for study may write Arthur W. Nunnery, M.D., Pediatric Pharmacology Unit, Children's Memorial Hospital, University of Oklahoma Medical Center, Oklahoma, or telephone CE 6-1366, extension 670 (area code 405).

An association of physicians interested in Kansas City General Hospital and Medical Center is being formed. A bi-monthly scientific and news bulletin will be published and sent to interested physicians. For more information, write to Dr. Russell Jones, Kansas City General Hospital, 24th and Cherry, Kansas City, Missouri 64108.

An intensive training program in Cardiology offered by the full time staff of the Institute for Cardiovascular Diseases, Good Samaritan Hospital, Phoenix, Arizona. This is an intensive academic effort covering the U.S.A. and abroad. The fellows will be trained specifically in the areas of: clinical care, intensive coronary care unit, electrocardiography, vectorcardiography, phonocardiography, apex cardiography, cardiovascular pathology, cardiovascular surgery, cardiac catheterization, selective angiography and clinical investigation. Experimental cardiovascular physiology, medical electronics, and statistics are also part of the program on an elective basis. Stipend—\$7,000.00

For information write: A. Benchimol, M.D., Director, Institute for Cardiovascular Diseases, Good Samaritan Hospital, 1033 East McDowell Road, Phoenix, Arizona 85002.

JUNE

- June 26-28 Spring clinics in *Pediatrics* sponsored by the Children's Hospital, Denver. Morning seminars and lectures will be held at Vail, Colorado. Write: Joseph Butterfield, M.D., Children's Hospital, 19th Ave. at Downing, Denver 80218.

JULY

- July 10-11 Missouri Conference on Trace Substances and Environmental Health, Environmental Health Center, Columbia, Missouri. Write: C. J. Marienfeld, M.D., Medical Center, Building TD-4 West, University of Missouri, Columbia 65201.
- July 14-15 Rocky Mountain Cancer Conference, Brown Palace-West Hotel, Denver. Write: Rocky Mountain Cancer Conference, 1809 E. 18th Avenue, Denver 80218.

AUGUST

- Aug. 7-10 National Medical Association, Chase-Park Plaza, St. Louis. Write Adm. Secretary: Samuel C. Smith, 520 W Street, N.W., Washington, D. C. 20001.
- Aug. 11-13 International Doctors in Alcoholics Anonymous, Airlie, Warrenton, Virginia. Write: Earl H. Mitchell, M.D., 3509 Dunlop Street, Chevy Chase, Maryland 20015.
- Aug. 17-19 Rocky Mountain Radiological Society, Brown Palace, Denver. Write: Robert W. Lackey, M.D., 4200 E. 9th Ave., Denver 80220.
- Aug. 27-Sept. 1 American Congress of Rehabilitation Medicine, Americana Hotel, Miami
(Continued on Page 278)



Personalities—IN KANSAS MEDICINE

The following members of the Society were elected to active membership in the American Academy of General Practice in April: **Richard R. Brummett**, Neodesha; **Elmer Taylor**, Sedan; **G. Robert Powers**, Bethel; **Alex Scott**, Junction City; **Richard V. Ohmart**, Oakley; **Robert Boyer**, Kingman; **William R. Brenner**, Larned; and **Spencer Fast**, Atchison.

In May **R. A. Haines**, director of Kansas institutions, announced the appointment of **Soon Ock Kim** as superintendent of the Norton State Sanatorium. Dr. Kim has served as acting superintendent of the hospital since August.

C. E. Brown, Stafford, went to Denver in May to attend a series of meetings on Clinical Dermatology for the General Practitioner at Colorado General Hospital.

William Nice, Topeka, was installed as president of Central States College Health Association at the organization's meeting in Rolla, Missouri, in April. Dr. Nice is director of student health services at Washburn University.

Eighteen Kansas doctors were honored recently for their participation as a Johnson County pilot group in a major national cancer prevention program. The U. S. Public Health Service and the American Academy of General Practice presented certificates of appreciation to **William Lentz**, Topeka; **E. C. Altenbernd**, Merrill D. Athon, **John O. Baeke**, **J. M. Boles**, **Kale C. Gentry**, **Charles E. Jones**, and **Lawrence E. Leigh**, all of Overland Park; **Thomas V. Batty**, **Kenneth W. Carbaugh**, **Jay D. Carduff**, **Wendell L. Good**, **Kenneth R. Kennedy** and **George R. Maser**, all of Mission; **Gene O. Harpster**, Prairie Village;

Norman H. Overholser, El Dorado; **Henry B. Sullivan**, Shawnee; and **James R. Webb**, Shawnee-Mission.

William J. Reals, Wichita, participated in the 28th annual Aerospace Medical Association Symposium held in Washington, D. C. in April. Dr. Reals, a consultant pathologist for the Federal Aviation Agency, served as a member of a panel and presented a paper on investigation of civil aircraft accidents.

In April, **J. H. Gilbert**, Seneca, attended the National Convocation of Medicine and Theology at the Mayo Clinic.

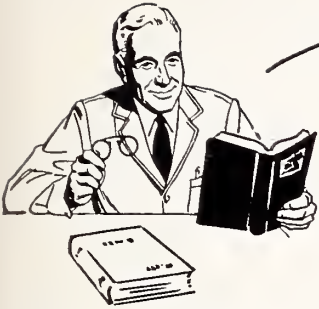
Dr. and Mrs. Karl Stock, Topeka, traveled to Baltimore in April where Dr. Stock attended a medical meeting at Johns Hopkins University.

John L. Morgan, Emporia, was the guest speaker at the April meeting of District 11 of the Kansas State Nurses' Association held in Emporia.

Dr. and Mrs. Harry R. Custer, Colby, attended the Clinical Congress of Abdominal Surgeons in Washington, D. C. in April. Dr. Custer participated in the program and had a scientific booth at the Congress.

Clay Center physician, **Richard O'Donnell**, formally became a member of the International College of Surgeons at a convocation of the organization held in Miami, Florida, in May.

(Continued on Page 278)



Book REVIEWS

CARING FOR THE AGED, by Bertram B. Moss, M.D. Fraser, Kent, Doubleday & Company, Inc., Garden City, New York, 1966, 368 pages. \$4.95.

The author is a general practitioner who, according to the information on the jacket, has been engaged in psychiatry, psychosomatic medicine, criminology, alcoholism, narcotics, geriatrics, and gerontology. The book is billed as "comprehensive, up-to-date, authoritative—filled with specific, practical guidance for anyone who is in any way involved with an elderly person."

The material discussed ranges from the size of the problem ("19 million above age 65 in our population today," "one third of our population supporting those under 21 and those over 60" in the future), through specific explanation of the biology of aging, economics of health, care of the aging, sociology of aging, diseases of the aging, to terminal illness and death. It is written for the families of aged people as a comprehensive source of information purporting to give answers to the questions such families often ask of a physician. It is thus written in "double" person, *i.e.* "the patient," with the author speaking generally as it were in monologue, and "your parent," as the author's portion of a "dialogue" as it were to the aged person's family.

Probably because of its far-ranging scope it has a cookbook quality which will appeal to readers who want "practical" and "specific" advice on the various subjects discussed but it will probably impress the more knowledgeable reader as either sophomoric or unduly dogmatic. I found, for instance, the first chapter on "The Five-Layer Cake" intriguing and thought-provoking. The chapters on Money Matters and Medicine, Legal and Tax Questions, Some Social Problems, and Housing for the Aged to contain much information useful to me as reference material. The chapters

on specific disease, entities which encompass half of the contents, to my notion contain too many inaccuracies and over-simplifications to recommend as more than a very general guide to families. I especially regarded the chapters on Organic Brain Disorders and Neurological Disorders and Emotional Illness too muddy to justify the 35 pages allotted to these two topics. The author's treatment of terminal illness and death indicated neither medical nor theological profundity but again might well be helpful to families who need to know how to do "the right thing" or "act in the right way."

As a reference book to be used by physicians for care of the aging it falls short. Because of the above shortcomings, every physician who takes care of older people would do well to read it before recommending it to families. The information given in this volume might be regarded much as a diabetic primer would be before using it in the education of a newly discovered diabetic or of his family.

It would be more useful if it would purport to be less comprehensive on medical and psychiatric specifics. The author convinces this reviewer that he *cares* and is not indifferent to the problems of the aged.—D.V.P.

CURRENT THERAPY: 1967. Edited by Howard F. Conn, M.D. W. B. Saunders Company, Philadelphia, 1967, 844 pages. \$13.00.

This 19th annual edition of *Current Therapy* carries on in the established format and tradition of its well-known predecessors. The editor, with the assistance of 12 consulting editors and 322 contributors, has prepared a volume containing 299 articles on the treatment of most common diseases and many that are uncommon. The articles, as one might expect in a multiple author book, vary in length and quality. As a rule the approach is pragmatic and dogmatic with greatest emphasis on the details of the regimen

of treatment of each condition while the rationale is given less stress. Current methods of therapy are given in detail while older, obsolete methods are not mentioned.

The book will probably be useful chiefly in two ways: (1) to help physicians check their therapeutic methods in order to be sure they are reasonably up-to-date, and (2) as a guide to treating patients who have conditions that occur in an ordinary practice too seldom for the physician to have all of the details of management at his command. One who wishes to understand the rationale of therapy better may need to consult other sources.

Current Therapy is a well-made book containing a reasonable number of tables and an adequate index.—
J.D.R.

Announcements

(Continued from Page 275)

Beach, Florida. Write: C. C. Herold, Exec. Dir., 30 N. Michigan Ave., Chicago 60602.

POSTGRADUATE COURSES

University of Colorado:

June 19-23 *Marriage Counseling for Physicians and Clergy* (Estes Park)

July 16-22 *General Practice Review*

July 31-
Aug. 4 *Pediatrics* (Estes Park)

For further information, write the Office of Postgraduate Medical Education, University of Colorado School of Medicine, 4200 E. Ninth Avenue, Denver 80220.

Aug. 14-16 National authorities in the field of sports medicine will be lecturers at a special postgraduate course of the American Academy of Orthopaedic Surgeons, Skirvin Hotel, Oklahoma City. Invited to attend the three-day course of lectures and audio-visual demonstrations are orthopaedic surgeons, general physicians, high school and college team physicians and others with a medical interest in the care of the athlete. It is to be sponsored by the Academy's Committee on Sports Medicine in cooperation with the U. S. Olympic Medical and Training Services Committee and the Department of Orthopaedic and Fracture Surgery, University of Oklahoma School of Medicine. For application forms and further in-

formation, write to Don H. O'Donoghue, M.D., 1111 N. Lee St., Oklahoma City 73103, or the American Academy of Orthopaedic Surgeons, 29 E. Madison St., Chicago 60602.

Personalities

(Continued from Page 276)

Vernon W. Filley, Pratt, traveled to Phoenix, Arizona, in April to attend the meeting of the Southwestern Surgical Congress.

The Crawford County commission recently appointed Wesley H. Hall, Girard, county health officer.

Dr. and Mrs. Charles Foster, Concordia, attended the annual meeting of the American College of Physicians in San Francisco in April.

Alexander C. Mitchell, Lawrence, was installed as president of the Kaw Valley Heart Association at the annual dinner meeting held in Atchison in May. The Distinguished Service Medallion for a physician was presented to G. Ralph Combs of Leavenworth.

"About Women" was the subject of Evalyn Gendel's presentation at the Kansas Extension Homemakers' Week celebration in Oberlin in April. Dr. Gendel, of Topeka, is assistant director of maternal and child health for the Kansas State Department of Health.

To be perfectly just is an attribute of the divine nature; to be so to the utmost of our abilities, is the glory of man.

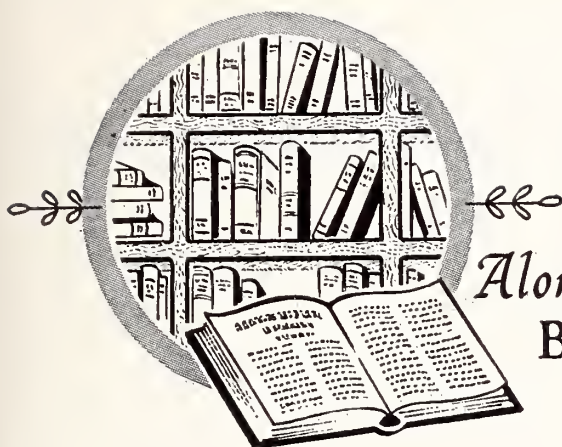
Addison

Though force can protect in emergency, only justice, fairness, consideration and cooperation can finally lead men to the dawn of eternal peace.

Dwight D. Eisenhower

One man's word is no man's word; we should quietly hear both sides.

Goethe



Along The BOOKSHELF

RECENT ACQUISITIONS

- Abbott Laboratories. Erythromycin: a review. . . .
Abbott Laboratories, 1966.
- American College of Neuropsychopharmacology.
Pharmacotherapy of depression. Thomas, 1966.
- Anderson, Kevin. The clinical practice of bacteriology. Davis, 1966.
- Boyd, William C. Fundamentals of immunology. 4th ed. Interscience Publishers, 1966.
- Brooke, Bryan N. Metabolic derangements in gastrointestinal surgery. Thomas, 1967.
- Coutts, Ronald T. Polysaccharides, peptides and proteins. Heinemann, 1966.
- Cutting, Windsor C. Handbook of Pharmacology, the actions and uses of drugs. 3d ed. Appleton-Century-Crofts, 1967.
- Dahlin, David C. Bone tumors; general aspects. . . .
2d ed. Thomas, 1967.
- Dargeon, Harold W. K. Reticuloendothelioses in childhood; a clinical survey. Thomas, 1966.
- Day, Eugene D. Foundations of immunochemistry. Williams & Wilkins, 1966.
- Evans, Christopher R., editor. Brain physiology and psychology. University of California, 1966.
- Frost, Harold M. The bone dynamics in osteoporosis and osteomalacia. Thomas, 1966.
- Golding, Douglas N. A synopsis of rheumatic diseases. Wright, 1966.
- Hahn, Petr. Utilization of nutrients during postnatal development. Pergamon, 1966.
- Harper, Robert A. K. Radiology of the Duodenum. Year Book Medical Publishers, 1967.
- Hunter, Andrew R. Essentials of artificial ventilation of the lungs. 2d ed. Little, Brown, 1966.
- Intensive care and resuscitation in heart disease: a report. . . . London, Chest & Heart Association, 1966.
- International Symposium on the Cardiovascular and Respiratory Effects of Hypoxia. Kingston, Ontario, 1965. Proceedings. Hafner, 1966.
- Jackson, Ruth. The cervical syndrome. 3d ed. Thomas, 1966.
- Jones, Howard W. Pediatric and adolescent gynecology. Williams & Wilkins, 1966.
- Kark, Wilfred. A synopsis of cancer, genesis and biology. Williams & Wilkins, 1966.
- Knock, Frances E. Anticancer agents. Thomas, 1967.
- Kuntscher, Gerhard. Practice of intramedullary nailing. Thomas, 1967.
- LeNoir, James L. Congenital idiopathic talipes. Thomas, 1966.
- Leon-Sotomayer, Luis. Unusual clinical features of cirrhosis and primary liver cell carcinoma. Thomas, 1967.
- Lewin, Walpole. The management of head injuries. Williams & Wilkins, 1966.
- Lilly (Eli) and Company. Diabetes mellitus; methods. . . . 7th ed. Lilly, 1967.
- Lurija, Aleksandr R. Human brain and psychological processes. Harper & Row, 1966.
- MacKenna, Robert M. B., editor. Modern trends in dermatology. Butterworth, 1966.
- Manfred Sakel Foundation, New York. Biological treatment of mental illness. Farrar, Straus and Giroux, 1966.
- Maxwell, Harold. Migraine: background and treatment; with. . . . Wright, 1966.
- Morton, Newton E. Genetics of interracial crosses in Hawaii. Karger, 1967.
- Mostofi, Fathollah K., editor. The kidney, by 33 authors. Williams & Wilkins, 1966.
- Myerson, Ralph M. Congestive heart failure. Mosby, 1967.
- National Conference on Infant Mortality, San Francisco, 1966. Proceedings. American Medical Association, 1967.

Clendening Medical Library

(Continued on Page 283)



WARREN F. BERNSTORF, M.D.

Dr. Warren F. Bernstorf, 75, died at his home in Winfield on April 28, 1967.

He was born July 27, 1892, at Frederick, Kansas. He received his medical degree from Northwestern University School of Medicine, Chicago, in 1918. After serving a one-year residency at Cook County Hospital in Chicago, he started practicing medicine at Pratt in 1919, moving to Winfield in 1937. Dr. Bernstorf was interested in the affairs of his community and was active in a number of civic and medical organizations. He was a past president of the Kansas Medical Society.

Dr. Bernstorf is survived by his daughter and grandchildren.

LOUIE J. BEYER, M.D.

Dr. Louie J. Beyer, Lyons, died on April 15, 1967, in the Lyons County District Hospital. He was 82 years old and had been a practicing physician in Rice County for more than 50 years.

Dr. Beyer was born October 4, 1884, in Danvers, Illinois. He graduated from the University of Kansas School of Medicine in 1910. After completing postgraduate work at Johns Hopkins University, he practiced medicine in Little River, and in 1933 moved to Lyons. He served on the Kansas University Board of Regents for several years and was a member of fraternal and medical organizations.

Surviving Dr. Beyer are his wife, two daughters and a stepson.

OTTO C. FRITTS, M.D.

Dr. Otto C. Fritts, 91, of Osage City, died in a Topeka hospital on May 1, 1967.

Dr. Fritts was born at Vichy, Missouri, on January 13, 1876. He graduated from Barnes Medical College in St. Louis in 1899, and came to Osage City in 1922. A physician there for many years, he served as coroner of Osage County for 15 years. He served as an officer in the U. S. Army during World War I.

Survivors include his wife, two daughters and two sons.

EDWIN R. HILL, M.D.

Dr. Edwin R. Hill, 57, Lyons, died on April 10, 1967, at the University of Kansas Medical Center.

Dr. Hill was born at Pleasanton on March 25, 1910, and in 1934 graduated from the University of Kansas School of Medicine. He had been in medical practice in Lyons for 30 years, except for service in World War II, when he served as a flight surgeon. Dr. Hill was an active member in a number of fraternal and medical organizations.

He is survived by his wife and three children.

LYNN J. L'ECUYER, M.D.

Lynn J. L'Ecyer, Concordia, died on May 4, 1967, at St. Mary's Hospital in St. Louis at the age of 64.

Dr. L'Ecyer was born March 25, 1903, at Aurora, Kansas. In 1926, he received his degree of Doctor of Medicine from St. Louis University School of Medicine. He moved to Greenleaf to begin his practice in 1928, and continued to serve that community for over 30 years, moving to Concordia in 1964. He was interested in the progress of his community and while in Greenleaf was active in business, civic and medical organizations.

He is survived by his four children.

LENNERT B. MELLOTT, M.D.

Dr. Lennert B. Mellott, 69, Bonner Springs, died at St. Margaret's Hospital, Kansas City, Kansas, on April 28, 1967.

He was born in Kansas City, Kansas, on August 19, 1897. He graduated from the University of Kansas School of Medicine in 1934, and began his medical practice in Bonner Springs the following year, retiring in 1960 after 25 years of practice in that community. Dr. Mellott served as mayor of Bonner Springs from 1949 to 1951, and was appointed acting Wyandotte County coroner in 1949. He was the resident physician of the Wyandotte County Home for the Aged from 1956 until his retirement. He was a veteran of World War I and served in the Public Health Service during World War II.

Dr. Mellott is survived by his daughter and one sister.

KANSAS STATE DEPARTMENT OF HEALTH
TOPEKA, KANSAS
Division of Preventable Diseases—Division of Vital Statistics—Kansas Morbidity Incidence
Summary of Cases Reported in February, 1967 and 1966

<i>Diseases</i>	<i>February</i>			<i>January-February, Inclusive</i>		
	<i>1967</i>	<i>1966</i>	<i>5-Year Median 1963-1967</i>	<i>1967</i>	<i>1966</i>	<i>5-Year Median 1963-1967</i>
Amebiasis	2	—	—	3	1	1
Aseptic meningitis	—	—	—	—	—	—
Brucellosis	—	1	—	—	1	—
Diphtheria	—	—	—	—	—	—
Encephalitis, prim., infect.	—	—	—	—	—	1
Encephalitis, post-infect.	—	—	*	—	—	*
Gonorrhea	249	214	207	624	485	473
Hepatitis, infectious	10	18	18	34	39	41
Meningococcal meningitis	—	3	1	1	4	2
Pertussis	—	—	—	—	1	2
Poliomyelitis	—	—	—	—	—	—
Rheumatic fever	2	—	1	2	—	1
Salmonellosis	11	17	11	18	24	24
Scarlet fever	3	23	19	33	33	33
Shigellosis	3	3	3	5	20	14
Streptococcal infections	197	344	344	647	556	556
Syphilis	64	91	85	180	179	173
Tinea capitis	1	6	6	6	10	10
Tuberculosis	17	28	17	31	41	37
Tularemia	2	—	2	4	—	2
Typhoid fever	—	1	—	—	1	—

* Statistics on 5-year median not available

STREPTOCOCCAL DISEASE OUTBREAK

An unusually high incidence of streptococcal throat infections has been noted in four counties this past month—namely Atchison, Shawnee, Osage, and Sedgwick. Over 200 cases have been confirmed as being Group A, beta hemolytic streptococci. Investigation of these outbreaks in school children has indicated that transmission has been primarily by direct contact and droplet nuclei rather than milk, food, or other fomites. Many of the individuals checked were found to be asymptomatic carriers. Chemoprophylaxis with penicillin is highly recommended to reduce the frequency of suppurative complications and to prevent the development of rheumatic fever and acute glomerulonephritis. Persons who do not tolerate penicillin may be given oral sulfonamides.

TETANUS IMMUNE GLOBULIN (HUMAN)

Communication has been received from one of the major pharmaceutical manufacturers announcing that through a speed-up in their blood-procurement pro-

gram, Tetanus Immune Globulin (Human) is now fully available in all parts of the United States. This gamma globulin solution, prepared from venous blood of humans hyperimmunized with tetanus toxoid, is highly recommended by the Advisory Committee on Immunization Practices of the U. S. Public Health Service for treatment of patients who have never been immunized with tetanus toxoid, and who have wounds indicating the need for tetanus prophylaxis.

Because this product is of human origin, the serum reactions associated with the use of equine or bovine antitoxin are eliminated. Studies have indicated that the frequency of these foreign protein reactions following antitoxin of equine origin vary from 5 to 30 per cent. Although serious reactions from the intramuscular injection of human gamma globulin have been reported, their extreme rarity makes it impossible to predict their occurrence. However, the possibility for such should be noted so that this or any other gamma globulin product is not used indiscriminantly.

A series of injections of tetanus toxoid, for active immunity, may be initiated concomitantly with tetanus

immune globulin. Tetanus Immune Globulin (Human) is available from several pharmaceutical firms. This product is not available for distribution by the Kansas State Department of Health.

AVAILABILITY OF LIVE "FURTHER ATTENUATED" MEASLES VACCINE

The live-virus "further attenuated" measles vaccine, produced by the Pitman-Moore Company, is now available from this Division, thus providing additional flexibility in the planning of community-wide measles immunization programs. The available supply of this vaccine is packaged in 50-dose vials, for jet injector use. Accordingly, this vaccine will have limited use in the offices of private physicians.

Also known as the "Schwartz" strain, this further attenuated vaccine is produced by additional passages through chick embryo tissue culture of the more familiar "Edmonston" strain live measles virus. Measles immune globulin (Gamma Globulin, Human) is neither provided nor recommended for concomitant use with the Schwartz strain measles vaccine.

Edmonston strain live measles vaccine supplied with measles immune globulin will continue to be available, as in the past, packaged in single dose vials (25 doses per package).

Along the Bookshelf

(Continued from Page 279)

- Nice, Charles M. Cardiovascular roentgenology: a validated program. Hober, 1967.
- Pegg, David E. Bone marrow transplantation. Year Book Medical Publishers, 1966.
- Raab, Wilhelm, editor. Prevention of ischemic heart disease: principles and practice. Thomas, 1966.
- Ravin, Abe. Auscultation of the heart. 2d ed. Year Book Medical Publishers, 1967.
- Reid, Lynne. The pathology of emphysema. Year Book Medical Publishers, 1967.
- Roaf, Robert. Scoliosis. Williams & Wilkins, 1966.
- Sackner, Marvin A. Scleroderma. Grune & Stratton, 1966.
- Schindler, Rudolf. Gastroscopy: the endoscopic study of gastric pathology. 2d ed. Hafner, 1966.
- Sheldon, John M. A manual of clinical allergy. 2d ed. Saunders, 1967.
- Simons, Robert D. G. P. Eczema of the hands; investigations into dyshidrosiform eruptions. 2d rev. ed. Karger, 1966.
- Society of Biological Psychiatry. Recent advances in biological psychiatry, v. 8. Plenum, 1966.
- Symposium on Candida Infections, London, 1965. Symposium on candida. . . . E. & S. Livingstone, 1966.

Symposium on Physical Activity and the Heart, Helsinki, 1964. Physical activity. . . . Thomas, 1967.

Warren, Katherine B. Intracellular transport. Academic, 1966.

White, Paul D. Hearts; their long follow-up. Saunders, 1967.

SWIMMING SAFETY

As the outdoor swimming season approaches once again, the safety experts predict with certainty that more than 6,000 Americans will drown in the coming months.

They will drown in swimming pools, in lakes and streams, at ocean beaches. Some will drown while in for a refreshing swim and others will fall out of boats or off docks and piers.

Many, if not most, of these drownings need not happen.

Today's Health, the family magazine of the American Medical Association, offers some basic safety rules that will help to avoid a tragic water accident for your family—

- Learn to swim and to relax in the water.
 - Never swim alone.
 - Do not swim when overly tired or when the water is extremely cold.
 - Do not overestimate your ability and endurance.
 - Swim at protected pools or beaches under the supervision of a trained lifeguard.
 - If a boat overturns, stay with it and don't try to swim a long distance to shore.
 - Never dive into waters of unknown depth.
 - Try new activities, such as water skiing or scuba diving, only after learning the skills from qualified instructors.
- Many families will do most of their swimming this season in private pools, in their own backyards or in those of a friend or neighbor. There also are some special safety precautions for private pools—
- Make certain the pool is kept clean and the water chemically purified.
 - Walk, don't run, about the pool. Horseplay should be forbidden.
 - Fence the pool and keep the gate locked to keep out small children.
 - Keep handy rescue equipment, such as long poles and ring buoys.
 - Keep bottles and glasses away from the concrete or metal pool deck.

The Kansas Medical Society—1967-1968

OFFICERS

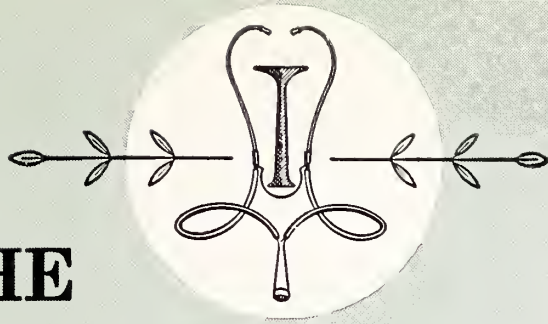
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A.M.A. Delegate.....	Lucien R. Pyle, Topeka
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A.M.A. Alternate.....	J. Warren Manley, Kansas City
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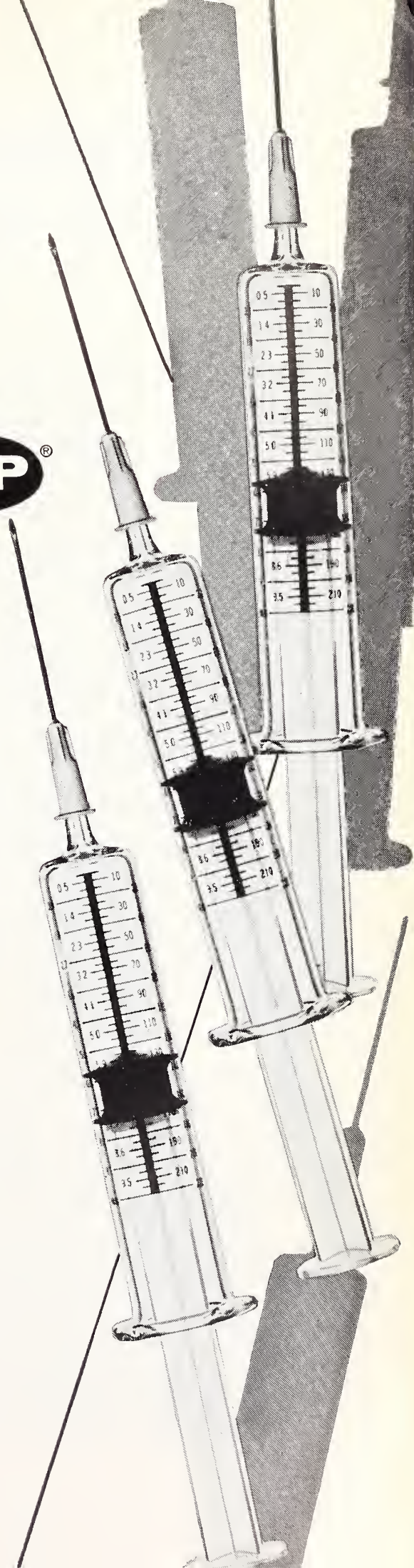
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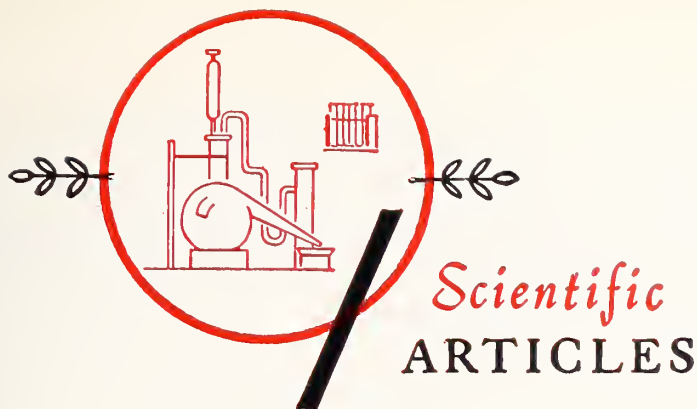
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Complication of Myocardial Infarction

Interventricular Septal Perforation After Myocardial Infarction

ARMANDO PEREZ SIMON, M.D.,* *Wichita*

IN 1845 LATHAN DESCRIBED the first case of interventricular septal perforation (IVSP) and the first antemortem diagnosis was made 78 years later by Brunn (1923). Septal infarction is relatively frequent as it occurs in about 60 to 70 per cent of all infarctions, but septal perforation after myocardial infarction is very rare. Admonson and Hoxie found 865 recent myocardial infarctions in 25,000 autopsies and 1.5 per cent of these cases had septal perforation. There have been about 250 cases of IVSP due to myocardial infarction reported in the literature.

The following is a report of two cases of IVSP following myocardial infarctions which were diagnosed antemortem.

Case No. 1. J.M.S., a 71-year-old man was admitted to the hospital on June 19, 1959. He awoke during the night with terrific chest pain, radiating to the back, neck and epigastric area, accompanied by dyspnea.

Initially he refused to enter the hospital, but he did return three days later for admission. The physical examination revealed a blood pressure of 110/80 and a pulse rate of 100 per minute. Auscultation of the heart failed to reveal any murmur and the sounds were distant. There were moist rales at the bases of the lungs and there was tenderness over the epigastric area on abdominal examination. The liver was slightly enlarged.

EKG (*Figure 1*) showed right bundle branch block with an anterior myocardial infarction extend-

Interventricular septal perforation following myocardial infarction is a rare complication which represents 1.5 per cent of all cases of myocardial infarction. For many years the diagnosis was made at postmortem examination, but lately cases have been reported with antemortem diagnosis, followed by postmortem confirmation.

Several reports of patients who survived corrective surgery have been recorded. The purpose of the surgery is to eliminate the shunt which is added to an already damaged myocardium.

ing to the septum. Treatment for acute myocardial infarction was carried out, without anticoagulants, and the patient improved and refused to remain in the hospital, leaving one week after admission. He returned to the hospital on July 13, 1959, again complaining of chest pain and dyspnea. He stated that he was out of bed all night due to shortness of breath.

Physical examination revealed the patient to be dyspneic and very pale with a pulse of 115 per minute and a blood pressure of 80/60. Auscultation showed a gallop rhythm with a harsh, pansystolic murmur, which was heard at the third and fourth left intercostal spaces where a systolic thrill was easily palpated. Lung auscultation showed many moist rales

* Veterans Administration Hospital, Wichita, Kansas.

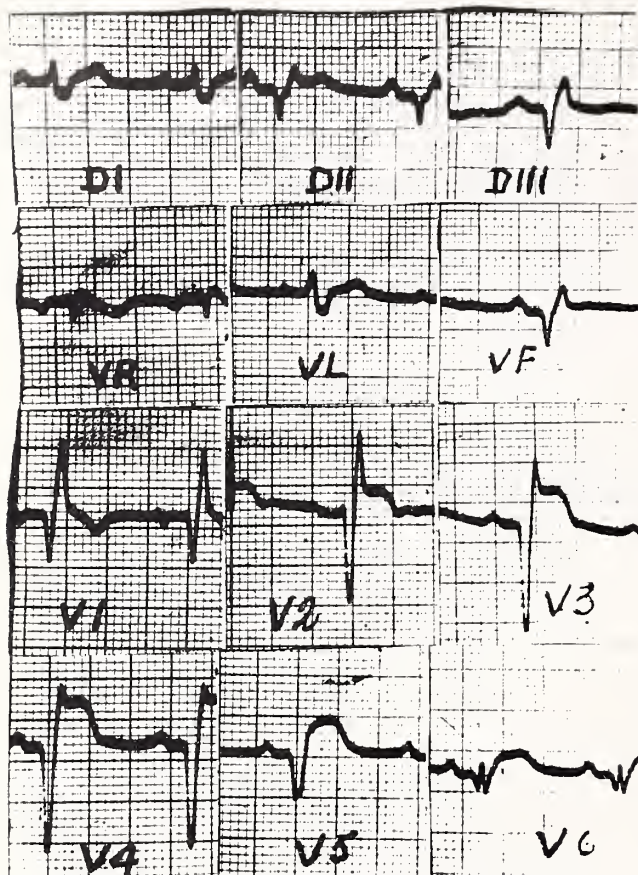


Figure 1. EKG of patient J.M.S.

at both bases. Abdominal examination revealed a hepatomegaly.

He improved with medication and nursing care, but five days later complained of a steady pain in the epigastric area which he emphasized was different from the chest pain. This abdominal pain persisted and became worse, followed by muscular rigidity. The patient died on August 8, 1959, one month after perforation of the septum. Autopsy revealed thrombosis of the left coronary artery with a fresh infarction of the anterior wall, apex and septum. Perforation of the septum (Figure 2) occurred because of post-infarction necrosis. A gastric ulcer, which perforated with resulting peritonitis, was also found. He probably died due to an acute fulminating peritonitis.

Case No. 2. T.P.A., a 53-year-old man, was admitted to the hospital on May 20, 1958, because of chest pain of one month's duration which increased the day of admission, with radiation down both arms and shortness of breath.

On physical examination the patient was dyspneic and restless with a blood pressure of 130/90. There were no rales present in the lungs and the liver was palpable 2 cm. below the costal margin. An EKG, taken when the patient was admitted, showed anterior myocardial infarction and right bundle branch block (Figure 3).

He was placed in bed and given medication, but

no anticoagulants. He improved until June 3, 1958 when, suddenly he became very pale, cyanotic and dyspneic with a fall of blood pressure to 50/40 and was pulseless. The most important finding was a pansystolic harsh murmur over the fourth left intercostal space and a palpable systolic thrill in the same area. Despite intensive shock treatment the patient remained in shock until he died several hours later. Our diagnosis of myocardial infarction with rupture of the septum was confirmed by the autopsy which revealed a massive infarction of the septum with a perforation of five millimeters.

Pathogenesis

The blood of the septum is derived, mostly, from the left anterior descending coronary artery. It is also supplied by penetrating posterior arteries, which are relatively short and derived from the posterior descending coronary artery. Perforation of the septum is rare because of the plentiful collateral. Should occlusion of the left anterior descending coronary artery occur the principal route of collateral circulation is through the posterior artery.

The cause of rupture of the septum is due to extensive necrosis of the myocardial infarction and the factors which are associated with the rupture, such as (1) hypertension, (2) advanced age, and (3) physical exertion.

The great majority of the patients with rupture of the septum after myocardial infarction are over 60 years of age.

Pathology

A large infarction with atherosclerotic changes in both coronary arteries are often found with rupture of the septum. Sometimes the perforation is so small that the pathologist does not see it. The perforation

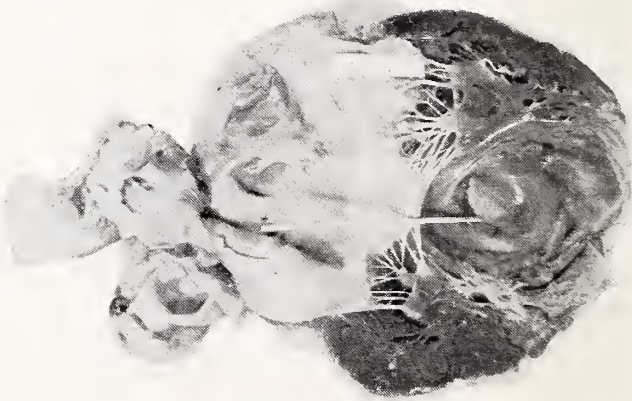


Figure 2. Perforation of the septum. The probe is in the hole produced by rupture.

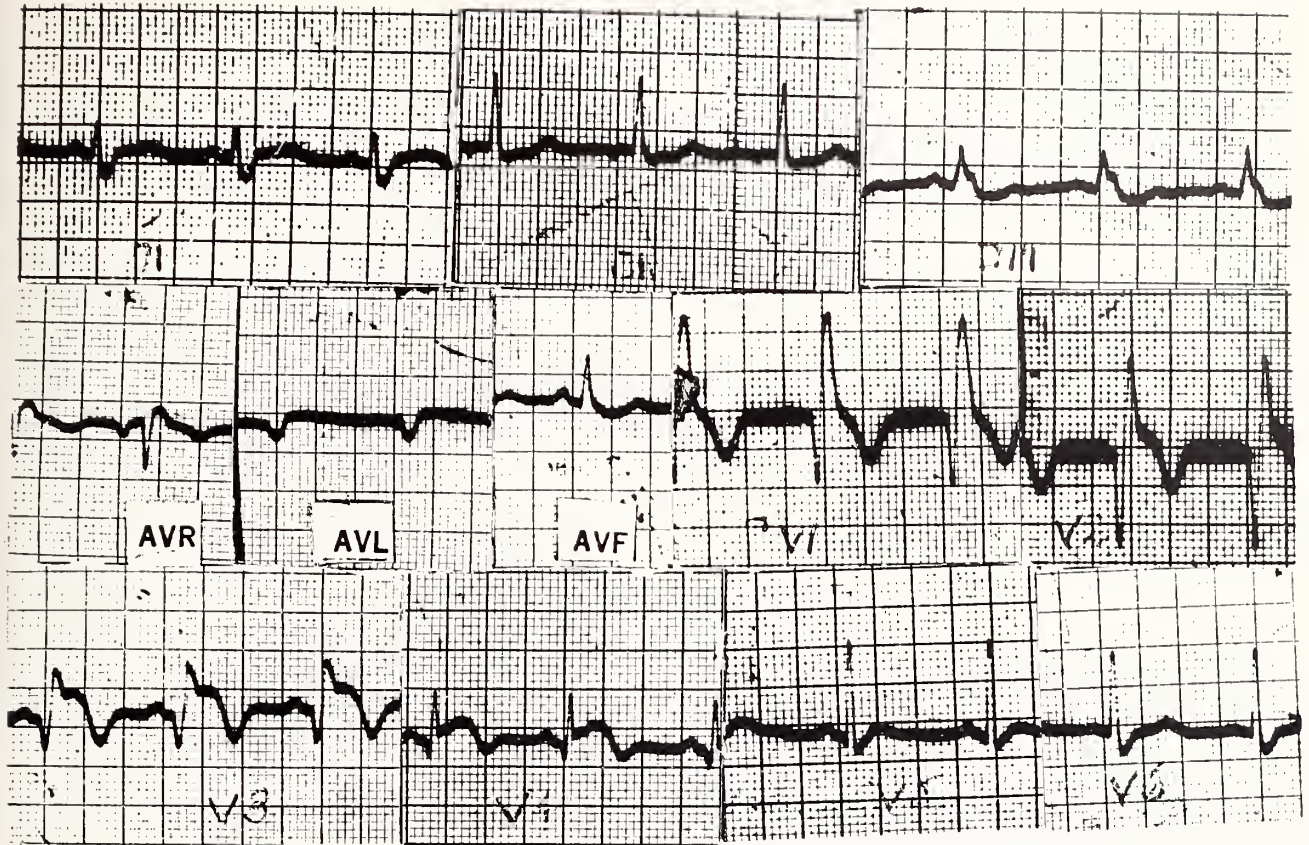


Figure 3. EKG of patient T.P.A.

in the area of infarction is located in the lower muscular septum and varies from a few millimeters to three centimeters.

The majority of septal perforations are found in the anteroseptal area but there have been cases with many perforations. Muller reported a case with nine perforations. Hypertrophy of the right ventricle with an aneurysm in the septum is often found in addition to the perforation of the septum. Double ruptures perforating the septum and the wall of the left ventricle or both ventricles have been reported.

Diagnosis

Clinically, interventricular septal perforation as a result of myocardial infarction presents a stormy picture with symptoms of shock, increased chest pain and heart failure. The most important finding is a sudden, harsh, systolic murmur in the fourth or fifth, and sometimes in the third, left intercostal space, which reminds us of auscultation of a congenital septal defect. In addition to the murmur there is a systolic thrill in the same area.

The murmur is characteristically holosystolic and harsh in 96 per cent of all cases, although some authors have stated that in four per cent the murmur is "a large systolic murmur with a small gap before

the second sound." Phonocardiograms have not been recorded in the majority of interventricular septal perforations. However, Cahill showed a case in which a "long decrescendo systolic murmur ended approximately 0.05 second before the onset of the second sound" and he considers the possibility of coexistence of pulmonary hypertension or a mechanical sealing of the defect by a mobile clot on the ventricular septum among other factors. There are authors who have described diastolic murmurs in some cases of interventricular septal perforation.

If the patient has been checked by daily auscultation during his stay in the hospital the appearance of this murmur, which was not present before, should come to the attention of the doctor. In the differential diagnosis of interventricular septal perforation one should consider the possibility of rupture of a papillary muscle. But this entity is very rare and more infrequent than interventricular septal perforations. It is important to emphasize that most of the cases with ruptured papillary muscle have EKG tracings which show signs of a posterior myocardial infarction.

The rupture of the papillary muscles often occurs a few hours after acute infarction and septal perforation usually occurs in the first two weeks. The murmur of the ruptured papillary muscle is greatest at the apex usually without a thrill and with a projection toward the axilla and is not heard at the

sternum as in septal rupture. In addition, the murmur in a case of interventricular septal perforation is louder.

According to Schwartz "the most frequent clinical picture of ruptured papillary muscle in the left ventricle is that of the underlying predisposing diseases, namely a myocardial infarction plus the development of a loud mitral murmur plus the signs and symptoms of intractable pulmonary edema." Occasionally in cases of ruptured papillary muscles the patient has frothy bloody sputum.

Prognosis

Interventricular septal perforation is a complication of myocardial infarction with an extremely serious prognosis as most of the patients die before the 16th day following perforation.

The studies of Sanders show that more than 50 per cent of these patients die within the first week following the rupture and an additional 30 per cent die within one to eight weeks, and 13 per cent survive for 13 years, as reported by Landale and Schlappi. Edmonson and Hoxie point out that the average time of rupture is 7.4 days after onset of symptoms of infarction. A patient with ruptured ventricular septum who survives more than two months can be a candidate for surgical closure. During this time it is possible that myocardial changes have become fibrotic permitting the suture to hold adequately.

The perforation of the septum is a very serious complication of myocardial insufficiency and as a result of hemodynamic changes in an already seriously damaged heart a shunt from the left to the right is created. It is very important to decide when the operation should be done and in our opinion the definite diagnosis should be made by a trained cardiologist who decides whether the patient should be treated conservatively or with surgery, as advocated by Soderstrom.

Summary

Two cases* of interventricular septal perforation after myocardial infarction, with antemortem diagnosis are reported in which both patients had a right bundle branch block.

The first patient had a perforated gastric ulcer with peritonitis as a complication. It was thought that he would have survived longer had he not had this additional critical problem.

The first patient died one month after perforation of the septum and the second died just several hours after interventricular septal perforation.

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* Both cases were admitted to the Clinico-Quirurgico Hospital, Havana, Cuba.

Testicular Tumor Therapy

Chemotherapy for Metastatic Seminoma —Case Report

ALFRED L. SCHERER, M.D., *Osborne*

THERE ARE A NUMBER of articles in the literature indicating beneficial effects of Furacin® in the treatment of testicular tumors, and that hormone producing tumors, namely choriocarcinomas, are responsive to Methotrexate®. The majority of evidence would indicate that Furacin® is beneficial, but has the drawbacks of side effects. The most prominent side effect of this drug is the production of peripheral neuropathies. In addition, nausea, vomiting, and testicular atrophy are noted. It is most important to note that the drug does not have a depressive effect on the white blood count.

The purpose of this paper is to report the effects of these drugs on the metastases of a testicular tumor with very high gonadotropic titers occurring in a middle-aged man, and to relate the history of this particular case which extended over a period of seven years.

Case History

A 32-year-old man was admitted to a local hospital in June, 1958, with the chief complaint of a mass in his right testicle. This was removed and sections revealed (*Figure 1*) a teratoma with changes of malignant seminoma. Because of the small size of the tumor it was considered to have a relatively high cure rate and the patient was so advised.

Six months later he again was seen with the complaint of gynecomastia. This was so severe as to indicate removal of the hypertrophic breast tissue.

In April, 1965 (almost seven years after operation) he reported to his local physician with a chief complaint of right lower quadrant pain. Examination and chest x-rays were clear. A urinary chorionic gonadotropin at this time was reported to be above 5,000 international mouse units.

He was referred to a large medical center where the above findings were confirmed. In May he was surgically explored and found to have a potato-sized mass in the aortic area next to the right kidney. The mass was completely excised without undue difficulty, and no other signs of tumor were noted. The

A patient with a seven-year history of testicular tumor and a 40-day history of metastasis had his metastatic disease treated with nitrofurazone (Furacin®) and 4-Animo-N¹⁰-methyl-pteroylglutamic Acid (Methotrexate®) without remission of his disease.

mass was found to be metastatic malignant seminoma.

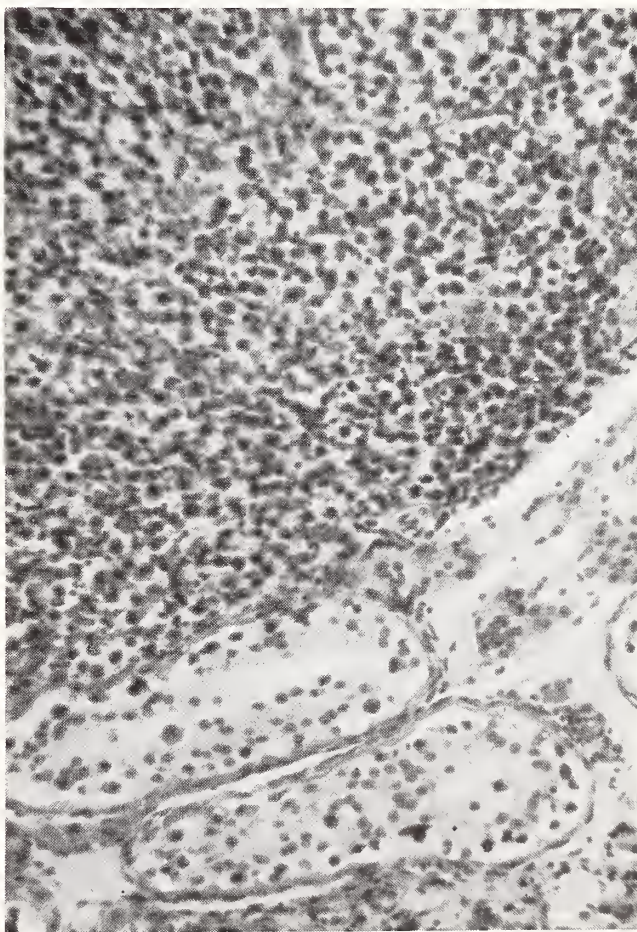


Figure 1

The patient made an uneventful recovery from his operation and was given cobalt radiation to the aortic area where the tumor had been. Three weeks postoperatively the patient noted one episode of hemoptysis. A chest x-ray, at that time, was clear of metastasis. One month postoperatively the patient noted a peculiar rash consisting of blisters occurring in streaks on the forearms and back of his legs down to his ankles. These were treated with antipruritics and antihistamines. On June 20 he had a grand mal seizure during his sleep, and upon hospitalization was found to have multiple metastasis to his chest (Figure 2).



Figure 2

He was started on chemotherapy on June 26, having 40 days of therapy with nitrofurazone, at $1\frac{1}{2}$ gm. per day. He lost approximately 4 gm. by vomiting, making a total of 56 gm. of Furacin® taken.

On July 1 he was started on Methotrexate®, 2.5 mg. four times daily. This was discontinued after 18 days because of a nose bleed and a drop in white blood count. He had received a total of 180 milligrams. His white count on July 17 was 7,900 and on July 25 it was only 2,500.

During the first week of therapy, he vomited frequently. His medication was then given in small multiple doses. His seizures became progressively more frequent until July 19 (the day the Metho-

trexate® was stopped) when he had 15 seizures in one day in spite of massive doses of barbiturate. He was lethargic, unresponsive, and could not add simple numbers. His seizures were march seizures, starting out in his left hand. He was right handed. The left testicle was reduced in size and became soft. From July 20 to 25 the patient rallied and became more alert. He could converse and add numbers. He was able to use the walker in the hall. However, on July 20 he started complaining of paresthesias of the extremities. This became progressively worse until it was most marked with a typical ulnar palsy.

Serial chest films never showed any loss of nodules. It was the radiologist's opinion, however, that the rate of growth of the nodules was lessened with therapy. During the first 11 days of observation, the nodules were noted to have a 100 per cent increase in growth. With therapy, the rate was noticeably reduced. His brief clinical improvement has been noted.

From July 25 he became progressively worse until his death on August 10 from metabolic acidosis.

An autopsy study revealed tumor nodules everywhere from skin to lungs to brain. The tumor was highly anaplastic with some question of villous formation.

Discussion

The above reported case shows an unusual history of a multifaceted tumor. It raises a number of questions:

First, did this tumor have gonadotropic properties from the start, and if so, would titers have been present over the seven-year history?

Second, why did the tumor suddenly spread after so long a time, and did the rash have any relation to the onset of the spread?

Third, what kind of tumor was this, one that changed or one that did not change but with a dormant, anaplastic, hormone-producing part?

Fourth, was this truly choriocarcinoma from the start?

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Treating Leukemia

Thymus Extract in Relation to Remissions in Acute Leukemia

FRANKLIN R. MILLER, M.D.,* *Winfield*

IN 1939, WEARN, MILLER AND HEINLE¹ showed that a material extracted from the urines of patients with chronic myeloid leukemia, and also another material extracted from the urines of patients with chronic lymphoid leukemia gave myeloid and lymphoid responses in the organs of guinea pigs.

Turner and Miller² theorized that there were two substances mutually reciprocal which brought about myeloid proliferation and lymphoid regression or myeloid regression and lymphoid proliferation. Miller, Herbut and Jones³ found that remissions could be obtained in acute leukemia, particularly acute lymphoid leukemia, with the extracts of urines from chronic myeloid leukemia. It was felt that in the normal, blood cell balance was brought about by these substances.

L. W. Law⁴ in original work, and in summarizing the work of others, has shown that the thymus had considerable to do with lymphoid proliferation and production as well as the migration of lymphoid cells.

Beginning in 1961, an effort has been made to link the thymus gland to these two substances, lymphokentric acid and myelokentric acid.⁵ It has been found that fetal thymus contains an excess of lymphokentric acid and probably small quantities of myelokentric acid, and that thymus from very old animals contains an excess of myelokentric acid and small quantities of lymphokentric acid. Since 1962 six patients have been treated with varying amounts of an extract of thymus from beef cattle. All have shown some clinical improvement.

This paper deals with the reactions in three individuals who had acute leukemia and received either one or both of two extracts of thymus. The methods for making these extracts are:

1. The thymus gland was removed and frozen. The frozen thymus was chopped and put through an electric meat grinder. Each 2.5 kilos of ground thymus was mixed with six to seven liters of normal

saline solution and stirred in a mechanical blender for three minutes. The fluid was then taken to a pH of 3.5 and again stirred and allowed to stand overnight. The resulting emulsion was then spun down in a centrifuge at 2,500 rpm and the supernatant fluid was poured off and the solid material discarded. To this was added 3.5 volumes of acetone, which was stirred or shaken from time to time and allowed to settle overnight. It was then filtered through a

A brief discussion of the basis of the use of thymus extract in treatment of acute leukemias, and a presentation of three cases in which it was used with significant response.

Berkefeld filter and the acetone removed by boiling. The remaining water solution was cooled and shaken with twice the volume of chloroform and placed in separatory funnels. The chloroform portion was drawn off, and the water solution was washed twice more with chloroform. All the chloroform portions were mixed together and the chloroform was boiled off. The remaining solid material was mixed with milk sugar and placed in capsules. Approximately eight capsules were usually equivalent to 2.5 kilos of the original thymus material and this was the dosage per day.

2. Frozen thymus was ground and mixed with normal saline solution. Three liters of saline solution or more if necessary were added to each 2.5 kilos of thymus. This was stirred or shaken frequently over a 12-hour period. It was then thoroughly mixed in a mechanical mixer, then boiled vigorously for 20 minutes, after which it was strained through a cheesecloth to remove all solid material. It was again boiled until about 300 cc's equalled 2.5 kilos of ground material. This fluid was given to the patient to drink.

Case Reports

Brief case reports of three patients are given:

1. A 33-year-old man who had acute myeloid leu-

* H. L. Snyder Memorial Research Foundation, Winfield, Kansas.

Dr. Miller is Visiting Professor of Medicine, Hahnemann Medical School and Hospital, Philadelphia, Pennsylvania.

kemia was seen two weeks after the diagnosis had been made. This man had pneumonia in April, 1965 and he had never been well from that time until he was seen in the middle of July, 1965. He had been told early in July that he had acute myeloid leukemia and that nothing would make him better. He was hospitalized and given 6-mercaptopurine, vitamins and transfusions. He improved over a two-week period and returned home. Suddenly he had chills, fever, sore mouth and throat. The 6-mercaptopurine was stopped. He was put in the hospital a second time and given transfusions, vitamins and started on the extract of "slump" or fetal thymus, which was given by mouth. For a time during this four weeks it was impossible to obtain fetal thymus gland, so that for part of the period he received the extract from very young, but born, animals.

At the start of his therapy with this material his white blood cell count was around 5,000, containing nearly 100 per cent myeloblasts and in these there were a large number of "Auer" bodies. His platelet count was as low as 7,000, and his red blood cell count was 2,000,000, and his hemoglobin 6.8 grams. At the end of 21 days of treatment with thymus extract, his platelet count had increased to 326,000, his red blood cell count was 3,600,000 and hemoglobin 11.6 grams, and he was not receiving transfusions. His white blood cell count was 5,000, with an almost normal differential. A bone marrow examination taken six weeks after the beginning of the second hospital admission showed no abnormal cells. At this time all therapy was stopped to see how long he might remain in remission.

No hematinics or vitamins were given him from the 2nd of September, 1965 until February 14, 1966. On the 14th of February, 1966 there were a few abnormal cells in his peripheral blood and his bone marrow had begun to regress toward a blastic type. He was allowed to continue work; but he was again started on "slump" or fetal thymus extract, and this was alternated weekly with thymus extract made from the thymus of cattle that were under two years of age. Throughout his entire year of life after the diagnosis of acute myeloid leukemia no thymus extract from cattle over two years of age was given him.

Through the period from the 14th of February until the 24th of April he received only thymus extract as therapy, and he worked throughout this time. On April 24 it was found that his hemoglobin was dropping. He was transfused and again started on conventional therapy, small doses of methotrexate, in conjunction with thymus extract. He was again allowed to return to work the middle of June. He was able to carry out his duties well for another four weeks, when suddenly his white blood cell count

started increasing, his red blood cell count and hemoglobin dropped and his platelet count dropped. Through this period he was given methotrexate, as well as thymus extract but even with this combination he died a year and a month after the diagnosis was made.

Aside from conventional therapy, this man received the chloroform extract of thymus until May 22, 1966, when it was supplemented with the boiled water extract of the gland.**

2. Throughout this same period another patient with monocytic leukemia was seen with a white blood cell count of 107,000. A bone marrow examination showed nothing but monoblasts, and monoblasts and monocytes dominated his peripheral blood picture. Fortunately, this 14-year-old boy maintained his platelet count and red blood cell count even though his white blood cell count was abnormal. He was originally given nothing but conventional therapy, 6-mercaptopurine, vitamins and one of the corticosteroids (prednisone) for three months, this was from the last of July until the middle of October. He did well on this therapy until the middle of October when his platelet count decreased and more abnormal white blood cells were found in his peripheral blood and bone marrow. He was started on thymus extract made from the glands of middle-aged cattle. He was, however, alternated weekly throughout the period from October 14 until his death on February 24, 1966, with very young or fetal thymus extracts and the extract from middle-aged cattle.

This boy was never ill, never lost a day of school throughout the entire time from the 27th of July, 1965, until he entered the hospital on the 8th of February, 1966. No transfusions were given him throughout this period. His entire treatment was with Brewer's yeast, one of the corticosteroids, 6-mercaptopurine or methotrexate and thymus extract.

Early in January his white blood cell count began to rise and it was difficult to maintain his platelet count. His red blood cell count and hemoglobin remained elevated up to the day he was admitted to the hospital, February 8, 1966. This patient received the chloroform extract of thymus, along with conventional therapy.

Whenever either one of these patients received the extract of fetal thymus their lymphocytes and eosinophils increased and they felt better. Each of these two patients felt well throughout most of the time they were treated.

This boy, after admission to the hospital, gradual-

** Charles A. Doan, M.D. graciously tried the chloroform extract on a patient with an acute crisis in chronic myeloid leukemia. He believes that her life was extended about two months and that a maturative effect was elicited.

ly, and then rapidly, went downhill. His white blood cell count increased to 500,000. With increasing doses of methotrexate it returned to normal levels, but it was impossible to bring his platelet count and red blood cell count up to normal. He had received no transfusions before he was admitted to the hospital, in the hospital he received five transfusions. The evening he died was following a day in which his red blood cell count had dropped rapidly in 24 hours. That day he was given two transfusions and he probably died of cerebral hemorrhage because of a low platelet count.

3. The third patient, a 24-year-old man, was a teacher of woodwork and a high school coach. He became ill in March, 1966. A diagnosis of primitive cell leukemia was made at that time and he was treated with 6-mercaptopurine for eight days and then with prednisone and transfusions until late in June, 1966. He was sent into the hospital June 22, 1966, at which time his red blood cell count and hemoglobin were normal. He had a 275,000 platelet count, his white blood cell count was 1,200. In his peripheral blood were abnormal cells which were unidentifiable. A bone marrow was taken and this again showed almost nothing but unidentifiable blast cells. His white blood cell count dropped to 700. He was given prednisone and ACTH and he maintained a very good platelet count, he had no purpura and he did not bleed. His red blood cell count and hemoglobin dropped, however, and three days after a transfusion he had a fever of 104° F. and he became jaundiced and had abnormal liver enzymes. At this point it was decided that he should have his spleen removed to see if this might bring about a partial remission.

His spleen was removed on July 5, 1966, and he had an uneventful recovery following which his blood counts came back to normal. The spleen showed extramedullary myelopoiesis. Shortly after splenectomy he was transfused and three days following this he had fever.

Because of the pathology of his spleen it was thought that he had acute myeloid leukemia and therefore he was given fetal thymus extract. Within eight days he began to show erythroblasts in his peripheral blood as well as an increase in eosinophils. A bone marrow taken at this time contained large numbers of lymphoblasts. The fetal thymus was stopped and he was given the extract of the old thymus glands, *i.e.* the extract of the glands of canners, cutters, bulls and old cows which were at least three to six years of age. Again he began to recover. His red blood cell count, his hemoglobin, his white blood cells returned to normal. His platelet count had dropped and this again rose to 280,000.

He was seen in excellent condition with normal blood counts on August 27, 1966, four weeks after the start of the old thymus extract. His blood counts at this time were: red blood cell count 4,100,000, hemoglobin 12.9 grams, white blood cell count 5,200, and platelets 118,000. His differential showed 55 per cent lymphocytes, 9 per cent band cells, and 36 per cent segmented cells.

He returned to the hospital after a day of nausea, vomiting and evidence of intestinal obstruction on August 31, 1966. He was in the hospital only three hours when he died. His blood counts at death were 5,200,000 red blood cells, a hemoglobin of 16.4 grams, a platelet count of 144,000 and a white blood cell count of 10,000 with a normal differential. He had received aside from prednisone, boiled thymus extract and occasional doses of ACTH.

At autopsy sections of his liver, adrenal and kidney as well as sections of his intestinal tract and bone marrow were taken. The liver and the adrenal appeared very similar to the autopsy material from those who had had acute lymphoid leukemia and had been treated with the extract from the urines of chronic myeloid leukemia patients.³ The bone marrow was normal.

It is interesting to note that J. Bousser *et al.*,⁶ in a study of 140 cases of acute leukemia in adults found that the average duration was four months for all types of adult acute leukemia; that in acute granulocytic leukemia or acute myeloid leukemia the average duration was 3.7 months; and that the average duration in acute lymphoid leukemia was 5.2 months.

Conclusion

These cases represent individuals who had a virus disease or a change in their genes or microplasmic particles or changes of DNA and RNA, which made their cells peculiar and unnatural or true mutants. We believe that two of these patients remained in good condition because of the use of the thymus extract plus the conventional therapy. The third patient seemed to be beginning a complete remission and it is possible that he might have gone into a long remission with the extract of thymus therapy had he not had a partial intestinal obstruction, fluid in his abdomen and possible bleeding from old leukemic sites.

It is believed that even though the leukemias may be virus diseases there is a balance of two substances, one being myelokentric acid and the other lymphokentric acid and that these two substances are formed in the thymus: the first before the thymus involutes has a great deal to do with lymphopoiesis and myeloid maturation; the second throughout life is the more important and in the old animal brings

about myeloid proliferation and lymphoid maturation. This does not completely explain all leukemias but this does bring up again the fact that mutation of cells can be partly controlled by hormonal substitution but after mutation of cells has occurred the total regression of the disease cannot be brought about by substitution therapy as it is in diabetes and pernicious anemia.

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RESPIRATORY ILLS AND ABSENCES FROM SCHOOL

Acute respiratory illnesses account for approximately one third of the absences of children from school, if the situation in the Omaha, Nebraska, schools is typical of the country as a whole.

Furthermore, weekly fluctuations in absences for all causes appear to be directly related to changes in the rate of absence associated with complaints of acute respiratory illness.

These observations were made as the result of a survey of absences and their causes among 3,102 pupils attending classes from kindergarten through high school in three public schools in Omaha. The report was published in the April issue of the *American Review of Respiratory Disease* (Vol. 95, No. 4), journal of the American Thoracic Society, medical section of the National Tuberculosis Association.

The study was undertaken in an attempt to define the role of acute respiratory illness in producing "disability" among school children, according to the authors, Gilbert S. Saliba, William Paul Glezen, and Tom D. Y. Chin of the Kansas City Field Station, Communicable Disease Center, U. S. Public Health Service.

Among the 3,102 children, who were observed for 123 days, the daily rate of absences was 4.2 per cent and of new absences (that is, the first day a child was absent) averaged 2.8 per cent. The duration of absences averaged 1.5 days. The rate of absences for respiratory infection followed seasonal variations, with rates in winter two to four times higher than those in spring. The total absence rates "reflect fairly accurately" fluctuations due to absences due to acute respiratory illness, according to the authors.

Acute respiratory illness headed the list of causes of absenteeism, being reported in 34.5 per cent of new absences. Approximately half of the children with respiratory illness complained of a "cold" and a third of a "sore throat" or tonsillitis, according to the authors. The second largest category of causes of absence was for "other medical causes," which were for the most part due to routine medical, dental, or eye examinations. The common childhood diseases such as measles and chickenpox accounted for only two per cent of the absences, according to the report.

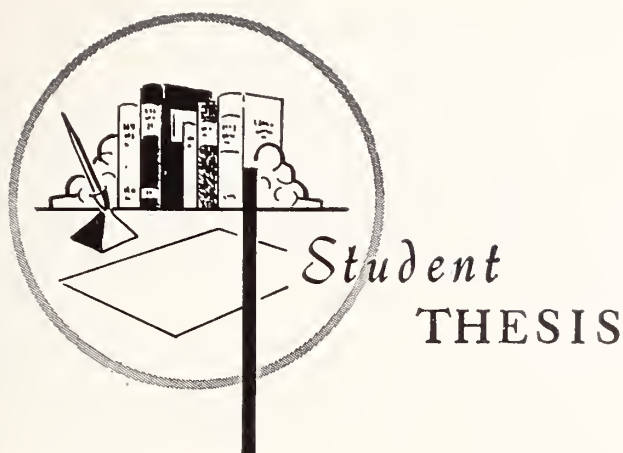
Throat washings were obtained from 340 of the absent children, and 80 isolations of pathogens from 77 specimens. These accounted for 24 per cent of the acute respiratory infections studied, the authors state. Two additional infections were detected in serum tests, one of which was associated with *Mycoplasma pneumoniae* (Eaton agent), involved in six relatively severe illnesses, and one with A2 influenza virus. Beta hemolytic streptococcus was the most common pathogen identified and was usually associated with pharyngeal complaints.

"Viral agents, comprising about 40 per cent of the positive isolates, were recovered from 10 per cent of all patients studied," the authors state. "These school children were infected with most of the viral agents commonly associated with respiratory infection. No species or family of these agents predominated to any significant degree.

"These findings differ from those among infant populations, in which respiratory syncytial (RS) virus and the parainfluenza viruses are the major etiologic agents of acute respiratory illness, and from those of adults, in whom rhinoviruses account for the major proportion of respiratory infection of known etiology."

Morality is simply the attitude we adopt toward people whom we personally dislike.—*Oscar Wilde*

He who has suffered you to impose on him, knows you.—*William Blake*



The Digitalization of Elderly Patients With Cardiovascular Disease Requiring Colectomy

BERRY L. McCORD, M.D.,* *Phoenix, Arizona*

THE CONTINUALLY increasing number of people in the older age group in our society gives this segment of the population ever increasing prominence in medical practice. There have been many studies concerned with the mortality and morbidity of patients more than 60 years of age requiring surgical treatment. It is well established that these patients have a high incidence of coexistent cardiovascular disease.

The data presented in *Table 1* indicate that preoperative cardiovascular disease is detectable in a significant percentage of patients more than 60 years of age and that a significant morbidity rate from cardiovascular complications follows surgical operations. These studies were compiled from groups of general surgical patients. The studies of Herron, *et al.*, Wilkins and Knight, and Gilchrist and DePeyster, were limited to patients with abdominal operations. The series of Haug and Dale, Anglem and Bradford, and Dorsey and Smucker included patients with all types of surgical operations.

Only the Herron, *et al.*, study gives data in all areas considered by the present study and is in close agreement with the present study. From these studies it is

evident that cardiovascular disease in the elderly patient requiring surgical treatment can frequently be diagnosed preoperatively and that it contributed in a significant way to postoperative morbidity. Factors providing support of the impaired cardiovascular system during the period of stress incurred by a surgical operation should be given consideration. It was thought a retrospective study of clinical material might give information regarding the effect of digitalis on the incidence and outcome of cardiovascular complications following major intra-abdominal operations.

Material

The charts of 186 patients having operations on the colon and rectum were carefully reviewed. Of these 186 patients, 68 or 37 per cent were judged to have coexistent cardiovascular disease. The criteria for estimate of the cardiovascular status were as follows:

I. History

- A. Cardiac failure, past or present
 - 1. Pedal edema
 - 2. Exertional dyspnea
 - 3. Orthopnea
 - 4. Paroxysmal nocturnal dyspnea
 - 5. Cough
 - 6. Foamy Sputum
- B. Angina
- C. Myocardial infarction
- D. Rheumatic heart disease
- E. Hypertensive heart disease

* This is one of a group of theses written by fourth year students at the University of Kansas School of Medicine, selected for publication by the Editorial Board from a group judged to be the best by the faculty at the school. Dr. McCord is now interning at the Good Samaritan Hospital, Phoenix, Arizona.

TABLE 1

<i>Authors</i>	<i>Minimum Age</i>	<i>Colon & Rectum Operations</i>	<i>Deaths</i>	<i>Mortality Rate Per Cent</i>	<i>Per Cent of Coexistent C-V Disease</i>	<i>Post-Op C-V Complications</i>	<i>Per Cent Post-Op C-V Complication Rate</i>	<i>Deaths from C-V Complications</i>	<i>Per Cent of Deaths from C-V Complications</i>
Dorsey & Smucker	75	74-Emergency & non-emergency	11	15	63				
Anglem & Bradford	70	173-Non-emergency	19	11					
Gilchrist & DePeyster	70	128-Non-emergency	10	8	30				
Wilkins & Knight	65	38-Non-emergency	5	13					
Haugh & Dale	60	30-Non-emergency	2	7					
Herron, Jesseph & Harkins	70	82-Emergency & non-emergency	13	16	37	10	12	5	6
Present study	60	186-Non-emergency	17	9	37	23	12	9	5

- II. Physical exam
 - A. Neck vein distention
 - B. Hepatomegaly
 - C. Edema
 - D. Increased cardiac size
 - E. Precordial heave
 - F. Thrill
 - G. Pulse
 - 1. Rapid rate
 - 2. Irregular rhythm
 - 3. Diminished peripheral pulse
 - H. Heart murmur
 - I. Friction rub
 - J. Fundoscopic changes
 - 1. Arteriosclerotic changes
 - 2. Hypertensive changes
 - K. Blood Pressure
 - 1. Systolic pressure above 150 in a patient over 60
 - 2. Diastolic pressure above 100
- III. Chest X-ray
 - A. Fluid in bases
 - B. Emphysema
 - C. Cardiomegaly
 - D. Congestion in lung fields
- IV. Electrocardiogram
 - A. Evidence of old myocardial infarction
 - B. Left ventricular hypertrophy
 - C. Irregular rhythm
 - D. S-T and T wave changes indicative of myocardial ischemia when associated with a positive history of angina.

Each patient's chart was reviewed carefully for correlation between the history, physical examination, chest x-ray and EKG. Fifty-nine of the 68 patients judged to have coexistent cardiovascular disease showed evidence of it in more than one of the four areas considered. Fifty-five of these 68 patients had abnormal EKG's. The only isolated finding that was considered evidence enough for cardiovascular disease was the demonstration on EKG of an old myocardial infarction.

Data

Thirty-nine of the patients with coexistent heart disease were not digitalized prior to surgery. Eighteen of these patients developed postoperative cardiovascular complications and seven patients died from these complications. The morbidity rate for this group was 46 per cent and the mortality rate was 18 per cent. Twenty-nine patients received digitalis in a standard digitalizing dose two or more days prior to surgery. These patients were receiving a maintenance dose at the time of surgery. There were five cardiovascular complications and two fatalities among these 29 patients. The morbidity rate was 17 per cent and the mortality rate was 7 per cent. These data appear in Table 2.

There was no significant difference in morbidity or mortality rates between private and ward patients. There were 17 cardiovascular complications among

TABLE 2

	<i>Patients Digitalized Preoperatively</i>	<i>Patients Not Digitalized Preoperatively</i>
Number	29	39
Number of C-V complications	5	18
C-V complication rate .	17%	46%
Deaths from C-V complications	2	7
Mortality rate	7%	18%

49 private patients for a morbidity rate of 35 per cent. There were six such complications in 19 ward patients for a morbidity rate of 32 per cent. Six private patients and three ward patients died, a mortality rate of 12 per cent and 16 per cent, respectively.

The records of these 68 patients were analyzed in detail for the presence of postoperative cardiovascular complications. These consisted of various cardiac

arrhythmias, myocardial infarction, cardiac failure, protracted angina requiring treatment of cardiac arrest. One or more of these occurred in 23 of these 68 patients. *Table 3* gives a detailed account of these 23 patients. The most common types of cardiovascular complications were arrhythmias and hypotension, each occurring in 12 patients. Myocardial infarction occurred in five patients and cardiac failure was present in six patients. Angina, occurring on several occasions and requiring medication, was present in two patients. Cardiac arrest was a complication in three patients.

There are two small groups of patients who are presented in *Tables 4* and *5*. In *Table 4* appear patients who (A) were digitalized on the date of surgery before definite indications had developed or (B) were digitalized in the first day or two after surgery prior to the development of indications. There were seven patients in the group. Four of these seven developed complications which could be caused by digitalis, namely, arrhythmias. Two of the four died in cardiac failure. Three of the four had coexistent cardiovascular disease. The group of patients listed in *Table 5* consisted of eight patients who received digitalis postoperatively with indications. Six patients

TABLE 3

<i>Case</i>	<i>Arrhythmias (Kind)</i>	<i>M.I.</i>	<i>Docu- mented Angina</i>	<i>C.H.F.</i>	<i>Hypo- tension</i>	<i>C.A.</i>	<i>Dig.</i>	<i>C-V Death</i>
55-10146			X					
57-2941			X					
62-16342		X					X	X
56-7344	Premature atrial contrac.						X	
56-11140	A.F. c AV block	X			X			X
53-12654	A.F.							
57-1372	A.F. c PVC's			X				
59-6863				X				
61-8437		X			X			
51-2509		X		X	X		X	X
60-11976		X			X		X	
57-14900	A.F.			X	X			X
62-4233	A.F. c pulse def.				X	X		X
62-17447	A.F. & supra V. atrial tach.				X			
53-11314						X		X
60-6404	P.A.T.							
56-10977	Supra V. tach. > 200				X			X
62-446					X	X		
55-1432	A.F.						X	
55-9166	Supra V. T. c atrial prem. & wandering pacemaker				X			X
62-4875				X	X			X
58-6812	A.F.				X			
61-2604				X				

C.H.F. = Conjunctive heart failure
M.I. = Myocardial infarction

C.A. = Cardiac arrest
Dig. = Patients preoperatively digitalized

TABLE 4

Case	Age	History of Cardiovascular Disease		Complications	Deaths
		A	B		
62-9491	62		X	Massive blood loss	X
45-4469	75		X	Atrial fibrillation; cardiac failure & angina	
58-6812	78	X		Arrhythmia and hypotension	X
64-24808	72	X			
55-9166	82		X	Arrhythmia and hypotension	X
57-14900	68	X		Arrhythmia; cardiac failure; shock	X
59-7932	75	X			

A. Patients rapidly digitalized on the day of surgery without indications.
B. Patients rapidly digitalized before symptoms developed in first days.

died and four of these had coexistent cardiovascular disease. These groups are too small to permit completely accurate deductions but the data suggest digitalis administered concomitant with surgery prior to accepted indications and in the immediate post-operative period to patients with coexistent cardiovascular disease does not alter the course of cardiovascular complications significantly.

Discussion

The data presented suggest that in this group of patients, with demonstrable cardiovascular disease, digitalis administered in an average digitalizing dose prior to surgery did reduce the number of cardiovascular complications and deaths due to such complications. Two other studies have also demonstrated this. A study by Wheat and Burford dealt with patients having various chest procedures. In their study three of 29 patients over 70 who were prophylactically digitalized developed a cardiovascular complication. Thirteen of 28 patients not prophylactically digitalized developed such a complication.

A similar study done by Heilbrunn and Hardin on

89 patients over 70 years of age who had thoracotomies showed that 19 developed postoperative arrhythmias. Four of these patients died of complications which developed because these arrhythmias could not be controlled. In 15 patients who had been digitalized preoperatively, only one developed an arrhythmia and none died. Cardiac failure was the leading cause of death in this study. This study also showed that the mortality rate for patients with an abnormal preoperative EKG was more than twice that of patients with a normal EKG. This compared roughly with the present study in which 20 per cent of patients with an abnormal preoperative EKG expired as compared to only five per cent of patients with a normal EKG.

Bristow advocates the use of prophylactic digitalization in patients undergoing cardiac operations. He cites references to support the fact that digitalis has a positive inotropic effect on normal human subjects and on patients with heart disease but without cardiac failure. He also states that digitalis has been shown to have a protective effect in experimental hemorrhagic shock. Other studies have shown an increased cardiac

TABLE 5

Case	Age	History of Cardiovascular Disease		M.I.	Hypo- tension	Cardiac Failure	Complications Cleared	Deaths
		Arrhythmia						
60-16381	75		X			X	X	
62-4875	71	X			X	X		X
60-11124	73				X	X		X
56-11140	69	X	X		X			X
61-2604	69	X			X	X		X
53-12654	72	X	X				X	
56-10977	70	X	X			X		X
59-12194	72		X					X

output in patients who are not in clinical failure when digitalized but who have a past history of failure. It has also been shown in patients with organic heart disease that digitalization reduces the oxygen debt after exercise.

Selzer reviewed the basic pharmacological actions of digitalis. These are: (1) inotropic action—increased strength of myocardial contraction, (2) chronotropic effect—reduction of heart rate due to depression of impulse formation at the SA node, (3) dromotropic effect—impairment of conduction through the AV node, (4) pressor effect—increase in peripheral resistance due to direct effects upon smooth muscle of the arterial wall, and (5) venopressor effect—increased venous tone with corresponding reduction in venous return. It is Selzer's opinion that all the actions of digitalis are operative each time the drug is given. The measurable effects of the drug depend on the particular circulatory dynamics operable when the drug is given. In the failing heart the inotropic effect of the drug produces measurable improvement in hemodynamic parameters, but in the nonfailing heart no real effect can be demonstrated because of the normal homeostatic mechanisms at work maintaining hemodynamic balance. Therefore, when the circulatory dynamics are normal, digitalis exhibits no measurable effect.

Several authors have demonstrated that the action of digitalis is the same on the nonfailing myocardium as it is on the failing myocardium. The concept that digitalis reduces cardiac output in individuals not in heart failure is no longer tenable. The prophylactic use of the drug has been advocated in patients with anticipation of cardiac overload and stress, as in preparation for surgical treatment. The findings in the present study support the use of digitalis when employed in this way.

The major difference between the present study and the studies by Heilbrunn and Hardin and Wheat and Burford is that in the present study the effects of prophylactic digitalization were assessed only in patients with documented cardiovascular disease. In these patients prophylactic digitalis apparently did reduce the cardiovascular complications and the mortality from them. A review of the history, physical examination, chest x-ray, and EKG of patients destined for a major surgical operation will suggest the presence of asymptomatic cardiovascular disease. This may establish the indication for prophylactic digitalization. The present study suggests the deliberate digitalization of patients prior to operations is more effective than rapid digitalization at the time of operations. These data also demonstrate that patients have difficulty recovering from postoperative cardiovascular complications when digitalis is given after complications develop. Finally, the incidence of

cardiovascular complications following operation in this group of patients with known heart disease was reduced when digitalis was administered preoperatively.

The classical indications for digitalis, namely, cardiac failure or atrial arrhythmias, are the main complications encountered in this group of patients as illustrated in *Table 3*. Although these classical indications arose postoperatively with great regularity in this study, they occurred much less frequently among those patients who had been prophylactically digitalized.

Summary

1. The records of 186 patients over 60 years of age who had partial colectomies were reviewed.

2. The data were compared to six additional studies conducted on surgical patients over 60 years of age.

3. Cardiovascular disease was established in 68 patients by correlating definite findings in the history, physical examination, chest x-ray and electrocardiogram.

4. Digitalis was administered prophylactically to 29 of the 68 patients with cardiovascular disease. The morbidity from postoperative cardiovascular complications in this group was 17 per cent and the mortality rate was seven per cent.

5. There were 39 patients not prophylactically digitalized. These patients had a morbidity rate of 46 per cent and a mortality rate of 18 per cent from cardiovascular complications.

6. The findings in this study suggest that each elderly patient who is to have a major surgical procedure should be evaluated for the presence of cardiovascular disease. If evidence of such disease is found, the morbidity and mortality from postoperative cardiovascular complications can be reduced by the use of prophylactic digitalization.

EDITOR'S NOTE: References may be obtained by writing the JOURNAL, 315 West 4th Street, Topeka, Kansas 66603.

A survey of state laws conducted by The Epilepsy Foundation of Washington, D. C., reveals that in many states people with epilepsy are still classified with "idiots, imbeciles and insane persons." These appallingly archaic laws only serve to increase the unwarranted social stigma of epilepsy. In truth, the majority of those with epilepsy have average intelligence or above. Many great men in history who surely fall into the genius category, have had epilepsy—Julius Caesar, Socrates and Lord Byron—to name just a few.



The Magic Eye

A Brief History of the Use of X-Ray in Kansas 1896-1905

FRANK R. VICTOR,* *Kansas City, Kansas*

IN 1896 KANSAS WAS far from an urban, medically progressive area. Boasting a population of 1,336,659, and having only three towns larger than 20,000, one would hardly consider it the proper location for a revolutionary new medical tool to be investigated and used. The physicians of the state were in the era of the fabled "country doctor," and their main role seemed to be spending time with their patients. This was before the age of the miracle drugs, and vaccination was not to be widely accepted for some years. As a result, the physicians spent a great deal of time nursing their patients through a fever or sitting up with them through a long fight with pneumonia. It is little wonder that the medical journals of the state were constantly pleading with their subscribers to submit an original article for publication. Unfortunately these pleas went unheeded for the most part, as the Kansas doctor felt his duty was to his patients. As a result, the journals were composed mainly of reprinted articles from the East and small announcements of the activities of state physicians. It is from these small notices and comments that we learn much of the activities of the Kansas doctors of the day.

The state had a respectable number of facilities for

higher education at this time, but it is significant to note that Emporia Normal had an enrollment of 1,745, while the University of Kansas had only 895 students for the academic year 1895-1896. It would appear that the preparation of teachers was more important (at least more popular) than education of the more specialized type available at the University of Kansas.

We are informed to some extent of the state of education in Kansas, as well as the country as a whole, by the presidential address to the Kansas Academy of Sciences by S. W. Williston, Ph.D., of Lawrence, Kansas, on October 28, 1897. In this address we hear a plea for wider acceptance of scientific courses of study and the acceptance of some natural science courses as a requirement in the liberal arts education leading to a B.A. degree. According to Williston, not only do students majoring in the arts need some science, but scientists need some background in the languages and other areas of the fine arts.

After decrying the state of education for physicians and lawyers, Williston offers the opinion that perhaps the best educated professional people of America are the engineers. He explains this as due to the criteria upon which the respective professions are judged. "The engineer is judged more by his peers, while the lawyer's or physician's success is dependent very largely upon the public. The capacity of the engineer must invariably be made apparent to

* Mr. Victor is a medical student at the University of Kansas School of Medicine. He received first prize in the 1966 History of Medicine awards presented by the Kansas Medical Society, for his efforts in preparing this paper.

men of affairs and ability, while the lawyer or physician is judged, for the most part, by those who are incompetent to determine his real merits." This view is of interest when considering the practices of physicians of the day, and will be of value later as an attempt is made to explain the rapid acceptance of the x-ray in Kansas.

The University of Kansas had one man on its faculty of 52 in 1896 who did a great deal toward the introduction of the new Roentgen rays to the physicians and the people of Kansas. By his efforts in so doing, he accomplished much more than he realized at the time. This man was Professor Lucien Ira Blake, Professor of Physics and Electrical Engineering. While he is best remembered for his work in underwater communication, Blake was active in early Kansas experiments with the x-ray. Just how rapidly Blake began his experiments will be shown by the following chronological order of events, and this will also serve to indicate the great influence he had on medicine in Kansas.

On December 28, 1895, Wilhelm Conrad Roentgen delivered his first paper "On a New Kind of Ray" to the Wurtzburg Physico-Medical Society for publication in its *Sitzungsberichte*. This paper was the result of a considerable amount of work in his laboratory and mentioned the fact that use of the ray would produce a shadow of the bones of the hand. Photographs of various objects made with the rays were made available with this paper, and had actually been circulated among a few of his friends before this. One of these first photographs was of Mrs. Roentgen's hand.

It was not long until the newspapers began publishing accounts of the strange and remarkable discovery of the German professor. The first newspaper story appeared in the *Wiener Presse* on January 6, 1896. It was not long until reports appeared all over the world, having been cabled from London.

Interest spread rapidly and the first clinical application most likely occurred in mid-January of 1896. At this time it is reported that a physician in Berlin used the new x-ray to make a "shadowgraph" of a finger which was suspected of containing a glass splinter. The x-ray clearly showed the splinter imbedded in the epiphysis, thus making the first clinical use one in which the diagnosis was positive.

Attention to and interest in the new rays were to be seen very rapidly in America. Naturally such a fantastic discovery had many doubters at first, but experiments in the East and Chicago rapidly won over these skeptics.

The earliest report of the phenomena and its possible medical importance in a Kansas medical periodical came on January 25, 1896. The KANSAS MEDICAL

JOURNAL reprinted on this date an article from the *American Medico-Surgical Bulletin*. This article showed a cautious interest in the new rays, and apparently the editors concurred, as they added no comment to the reprinting. The wording of the article was cautious to say the least.

We await with much interest a further report on the discovery said to have been made by Professor Rontgen (sic), of Wurzburg (sic), of a property that the light emitted from a Crooke's tube has in penetrating opaque substances. . . . It has also been used, so it is reported, to photograph broken limbs and bullets embedded in the flesh.

If this reported discovery proves to be true, it would be of immense value to at least two branches of medicine—surgery and obstetrics. . . .

Until we have learned more of the detail, however, we are disposed to be skeptical regarding this new triumph of science.

It was about this time that the earliest therapy was reported in Chicago by Dr. Emil Grubbe. On January 29, 1896, Grubbe treated a breast cancer with the x-ray, and on January 30, 1896, treated a patient for Lupus Vulgaris. The rationale for these treatments came from the observation that skin exposed to the rays often became dried and apparently lifeless. It was therefore reasoned that diseased tissue could well be effected in the same manner.

It is reported that the earliest American roentgenogram (that is, a photograph as opposed to an image on a fluorescing screen), was made on February 3, 1896, by Edwin Brant Frost, a physics teacher at Dartmouth College. Considering the fact that some work was apparently being done in Chicago and in eastern cities at an earlier date, there were likely some earlier photographs made, but not reported in the medical journals. Glasser reports that work was being done in January and cites Professor M. I. Pupin of Columbia as making one of the earliest radiographs in January, 1896. A great deal of work with the x-ray was done by physicists and electrical engineers, who were more likely to report their work in electrical journals than in medical periodicals.

Only eight days after this reported first roentgenogram we find that Professor Blake has successfully made an x-ray photograph at the University of Kansas. The local weekly newspaper records this historic event as follows: "Tuesday afternoon (February 11, 1896) Professor L. I. Blake and his assistant Mr. A. S. Dunstan of the department of physics photographed the bones of Blake's hand . . . (Blake is the) first Western man to successfully make the experiment."

Reports of this and other experiments were given in newspapers and other popular periodicals of the time. The public was greatly interested, and in some

cases alarmed by the fantastic new discovery. Although there is no record of efforts in Kansas to "protect the public" from the new rays, some people elsewhere were up in arms. One such case was a British firm which announced a line of "x-ray proof underwear" soon after knowledge of the discovery became common. Another person moved to act in the public interest was a state legislator in New Jersey who introduced a bill which sought to prohibit the use of the new rays in opera glasses. We are not sure if this was intended to protect the morals of the audience or the privacy of the performers. Kansas, however, seems to have been free of any such historical "firsts."

A rather lengthy article appeared in the *Lawrence Journal World* the week following Blake's experiment in February, and included an interview with Professor Blake. In this interview he discussed his researches and what he hoped to learn. Of the many ideas considered possible concerning the use of the rays, the most fantastic was the possibility of "throwing them deep into the earth, reflecting them back, and impressing the reflection on a photographic plate." The same idea was proposed for "photographing" under the North Pole. These were truly fantastic ideas, but how closely they remind us of our modern radar, sonar, and the methods used to make maps of underground rock formations.

Blake also saw the key to more wide use in medicine as finding a method to reflect the rays back to their source, thereby making possible true photographic techniques. Using such a scheme, Blake said, "... if the rays can be made to penetrate the body to the heart and be reflected back we will be able to take instantaneous photographs of the action of the heart and the circulation of the blood, and photograph the condition of the various organs." These seem to be highly medical aims for an electrical engineer, and show a tremendously inquisitive and progressive mind.

The reserved opinion of the *KANSAS MEDICAL JOURNAL* in its first report, cited earlier, was changed to cautious acceptance of the x-ray as it reported the work at Kansas University. Toward the end of February, 1896, the following statement appeared: "The new rays by which it is proposed to photograph hitherto opaque bodies seems to be a success. Experiments have been conducted at the Kansas University and some good results obtained."

With the new discovery receiving such good publicity in both the medical and public press, an interest developed among physicians and laymen alike. At this time we find the first of a series of demonstrations given in the area. The Kansas City area saw the x-ray for the first time on March 12, 1896, at

the regular meeting of the Jackson County Medical Society. At this time, Gilbert B. Morrison, Professor of Physics at Kansas City (Missouri) High School, delivered a lecture and made some x-ray plates.

When the Eastern Kansas Medical Society met in Lawrence on April 14, 1896, the program included a lecture and demonstration of the Roentgen rays by Professor Blake. This was announced in advance in the *KANSAS MEDICAL JOURNAL* on April 4, 1896, and was apparently well received by the physicians in the area. It seems obvious that the medical profession in Kansas was keeping fairly well abreast of the development of the x-ray, as a Topeka physician took a patient along to Lawrence on this occasion, in order to have an x-ray made by Professor Blake.

The outcome of this x-ray was not reported for some months, but after several articles had appeared in national journals concerning the dangers of the x-ray, an article appeared in the *KANSAS MEDICAL JOURNAL* dealing with the incident. The Topeka physician (who happened to be a woman) took the patient to Lawrence to attempt to locate and confirm the presence of renal calculi. After an exposure of one and one half hours, Professor Blake was unable to produce a satisfactory photograph, so the project was halted. The physician reported that the patient's pulse rate had increased and she suffered more frequent attacks after the experiment. The object of the article was to warn the profession of the possible dangers of using x-rays.

Although the results were not desirable from a medical standpoint, there is a significance not to be missed. When we realize that this was the first demonstration of the x-ray in Kansas, we are struck by the willingness of the doctor to try to utilize them for a practical application on this first possible chance. Further, the fact that the patient was willing to submit to such an experiment is an indication that the public was ready and willing to accept this new phenomena.

Apparently the next demonstration by Blake occurred on April 25, 1896. At this demonstration we find J. Hamilton Stone, the medical officer from Fort Leavenworth, in attendance. Before leaving for the demonstration Stone prepared cultures of cholera, typhoid, diphtheria, anthrax, and staphylococcus aureus from the laboratory at the fort, and took these with him. It was his hope to test the germicidal effects of the x-ray. After exposing the cultures to the x-ray for ten minutes he transferred them to sterile agar plates to test the effects. His experiment failed to show that the rays had any such effect, but he openly questioned if the short exposure was adequate. This question of time was indeed a factor of importance at the time, because the exposure

time for making x-ray photographs was measured in minutes or hours, not the extremely short exposures of today.

In May of 1896 we find the public getting its opportunity to view the x-ray for the first time. The *Lawrence Journal World* carried the following announcement:

One of the greatest discoveries of this century will be clearly explained and beautifully exhibited at the Opera House next Monday night (May 11, 1896). Professor Blake will reproduce all the Roentgen experiments and during the course of the lecture will photograph a subject thus giving the audience a rare opportunity of observing the effects of the x-rays. Price of admission 25 cents. Reserved seats at the Santa Fe ticket office. The lecture is under the auspices of the University Y.M.C.A.

At this public demonstration Professor Blake took a "shadowgraph" of a young lady's hand which was then exhibited. An attempt to x-ray the foot of a boy from Garnett was not successful because the boy moved during the exposure. The following day the foot was successfully photographed and a bullet which had been imbedded for three months was located. Physicians were beginning to utilize the new rays with Blake's help, and found the results very satisfying after probing for bullets and needles to no avail.

On June 2, 1896, the Southeast Kansas Medical Society met and a paper delivered by its president, Dr. J. B. Carver of Fort Scott, was entitled "The X-Rays." Thus we see that not only an interest in the new phenomena had spread, but apparently sufficient knowledge of the subject was available for a physician in Fort Scott, Kansas, to write a paper on it. This speaks well for the physicians of the state, as the care of patients no doubt made great demands upon their time, leaving but meager opportunity for keeping abreast of medical advances. It also shows that Kansas physicians were reading a number of medical journals from other sections of the country, for while the journals published in Kansas were reprinting a few articles from other journals, the number and extent of these seem hardly enough to explain the knowledge and interest shown in this and other cases.

Throughout the remainder of 1896 we find a considerable interest in the x-ray throughout the eastern part of the state, and an increased diagnostic use of the new tool. Professor Blake apparently led the way in this, as he has been described as ". . . spent most of his off-duty or leisure time in a dark-curtained room studying the Roentgen ray and assisting physicians in locating broken and fractured bones in the bodies of their patients." During this period he is also supposed to have lowered the necessary exposure

time for making a satisfactory "shadowgraph."

Other notable events during the year 1896 included the purchase of an x-ray apparatus for the Kansas Medical College in Topeka. This machine was purchased September 1, 1896, so was available for use during the academic year 1896-1897. What good fortune it was for the medical students to have an x-ray machine in their own college less than a year after Roentgen's announcement of his discovery. No doubt this also added to the prestige of the college, thus attracting more students. It also provided an available x-ray machine for Topeka physicians.

All during the year Professor Blake continued to aid physicians by taking x-rays of patients brought to him for various reasons. These included broken bones of all types, as well as patients who had a variety of foreign bodies imbedded in their flesh. Apparently it was quite common for Kansans of the day to have a bullet or a broken needle lost in an arm, hand, or foot.

Blake must have also had considerable acumen as an interpreter of bone trauma and pathology as shown by the x-rays. The Fort Scott *Monitor* of October 7, 1896, carried a front page account of Blake's work in this area. On October 6, 1896, Blake x-rayed the foot of a Hiawatha girl to determine how much of it was diseased. Doctors had anticipated amputation of the entire foot, but the x-ray showed that only the heel was diseased. Thus the foot was not amputated in its entirety as originally planned. Unfortunately an abscess formed later and the foot had to be amputated in late November. Accounts of this case were carried in *The Electrical Journal* and *The American X-Ray Journal*, providing one of the rare instances when Kansas x-ray work was mentioned in national publications.

An article in the Topeka *Daily Capital* on December 8, 1955, is confusing to our chronology at this point. This story contains some conflicting information to our established chronology. Excerpts from the article follow.

Thursday (December 10, 1955) marks the 59th anniversary of the first x-ray taken in Kansas. The x-ray, reproduced at left, is the hand of Mrs. Charles B. VanHorn . . . widow of the late Dr. Charles B. VanHorn, prominent Topeka physician. . . . The x-ray was taken in 1896, shortly after the German scientist, Roentgen, discovered the "unknown ray." . . . VanHorn, then a science teacher at Washington, Kansas, became interested in the new ray and started to work on a machine of his own. He was then planning for a medical education. He queried Kansas University about x-ray and was told "we don't know a thing about it. Go ahead and try it yourself, you know as much about it as we do."

VanHorn apparently purchased a tube and static machine from Queen & Company, Philadelphia, and set up his own x-ray outfit. A print of the x-ray he took of his wife's hand at that time is in the files of the Kansas State Historical Society in Topeka. The x-ray of Mrs. VanHorn's hand is typical of the very earliest attempts at x-ray. It shows the bones of the hand distal to and including the metacarpal, but only the metacarpal-first phalangeal joint is clear. There is, of course, no bone detail visible and the outline of the bones is blurred.

Attached to this print in the Historical Society Archives is a newspaper clipping which has no date or newspaper name at all, but is obviously quite old. The article is brief, but gives the same tale as in the 1955 story. This notice, however, gives July, 1896, as the date of Roentgen's discovery.

Obviously, the writer of the original article was not properly informed on his subject matter concerning the discovery of the x-ray, but one would expect better information on the subject of the article. Either the event occurred much earlier, or someone at K.U. was sorely mistaken when they wrote the reply to his letter of inquiry. Either explanation seems inadequate, because earlier experimenting than the work by Blake seems hardly possible, and considering the attention gained by Blake's work, one would need to be extremely isolated not to have heard of it in the eastern part of Kansas. It is probable that this article is the product of inaccurate reporting and a mistaken or overzealous guarding of information by someone at K.U.

Use of the x-ray continued to spread in Kansas during 1897-1900, and we find increased mention of the people using it. In 1897 Professor Blake continued to do many notable things with the Roentgen rays, as he successfully photographed four gallstones in a Fort Scott man. Blake also participated in what was another Kansas first as he took his x-ray apparatus to Wichita in the spring of 1897 to make a photograph for a legal suit. This case is reported as involving a broken wrist set by a railroad physician, for which malpractice was claimed. This was apparently a testimony to Blake's reputation, as there is evidence of a clinic in Wichita which had an x-ray at this time.

By late 1897 the x-ray had moved as far west as Sterling, Kansas, where it was being experimented with at Cooper College (now Sterling College) by the physics professor. This professor presented a program for the Rice County Medical Society on January 26, 1898, in which he demonstrated the x-ray. Prints of the x-rays taken that night were distributed to the physicians, one of whom was apparently Dr. P. P. Trueheart, as one of the prints has remained in

the Trueheart Clinic in Sterling. The print shows a foot which has a broken needle imbedded in the distal end of the fourth metatarsal bone, and is quite a clear x-ray. Dr. P. P. Trueheart was obviously interested in the possibilities of the x-ray, for soon after hospital facilities were established in 1902, an x-ray machine was installed. A photograph from the Trueheart Clinic shows a Wimshurst machine, typical of the era, and bears the notation "First x-ray machine in Sterling Hospital. Purchased 1903. Static Machine." It is a hand operated model, and uses the standard spark-gap adjusters, as well as an entirely exposed tube.

The machine was used by Dr. P. P. Trueheart and his son, Dr. Marion Trueheart, who joined him in practice at Sterling upon his graduation from Kansas City Medical College in 1904. The Wimshurst machine continued to be used for diagnosis until replaced about 1910. There still remain in the possession of the Trueheart Clinic several prints of x-rays taken by this machine, as well as some old tubes which may possibly have come from it. The prints are somewhat indistinct, but show the basic bone structure, and were no doubt useful in the diagnostic role for which they were intended. All were taken with a low kilovoltage, and have little or no bone detail.

At approximately this same time a machine appeared in Erie, Kansas, in the office of Dr. Palmer. While no exact date can be assigned to it, it appears to be of the 1900-1910 vintage. The machine remains in Erie to this day, and is in the possession of Dr. Palmer's daughter. The tubes from this apparatus are in the University of Kansas History of Medicine Collection. All of the tubes are of German manufacture, and they can be dated to some degree by their type and patent numbers. One of these tubes is made by Mueller and bears the patent number for which he applied in 1901. One of the other tubes is of a type not developed until 1904 by Piffard, so apparently the machine was kept up to date.

We have reports that machines appeared in other towns in Kansas during this period, but no extensive information is available. By 1900 we can find about a half dozen of the new x-ray machines in various towns around Kansas. No doubt there would have been more had the physicians been able to afford them. The period in discussion was one in which we find repeated reference in the journals to the difficulty the doctors had in collecting their fees. The people had little money, and were often only able to pay in goods, if at all. The price of a complete x-ray outfit was three to five hundred dollars, and this was quite a sum to accumulate at one time. Even with this obstacle, several men were able to

acquire the necessary apparatus. This brings to our attention the question of why the x-ray was so rapidly accepted and sought after in Kansas.

It seems remarkable that a discovery of such a unique and revolutionary a nature was so readily accepted and utilized in an area like Kansas. We are even more amazed when we compare it with the germ theory, which had such a long and difficult struggle for acceptance in Kansas, as well as other parts of the world. The germ theory was many years in establishing a foothold in Kansas, and even then the physicians were more inclined to utilize the practical aspects of antisepsis and asepsis than to accept the germ theory which prompted them.

As we consider the history of the germ theory we may find some reason for the reluctance to readily endorse Lister's proposals. Throughout history there had been a number of men who advocated a similar theory, but had not possessed the tools necessary to add substance to their ideas.

We find that in 1840 Henle had stated "The material of contagions is not only an organic but a living one and is indeed endowed with a life of its own, which is, in relation to the diseased body, a parasitic organism." Yet, even with this positive statement, Henle could offer no physical proof of his idea.

It was left to Pasteur in 1865 to establish the existence of germs in the air and as a cause of a specific disease, namely a disease of silk worms in France. Lister in England seized on this idea, and using carbolic acid as an antiseptic, developed his methods of antiseptic surgery. After working with his new methods for two years, he published his results in 1867. In England his ideas were rejected but they were more readily accepted on the European continent.

Use of the antiseptic method was more slowly adopted in America, but within a few years it found some supporters here. Even with the gradual acceptance of the methods, many physicians refused to accept the concept of germs as a cause for disease. In October of 1870 the *Leavenworth Medical Herald* reprinted an article from the *British Medical Journal* which offered the following advice:

For one important reason, I believe it would be well if the theory of their (germs) existence were abandoned; and that is, I think the antiseptic treatment would be more extensively used and impartially put upon its trial, were it not for the distrust engendered by its being directed against what is naturally looked upon by many in the light of a hypothetical enemy.

The same article considers the idea that germs exist absurd, because "if there be germs in the air,

the powerful microscopes of the present day ought to show them."

Apparently such feelings were widespread in the United States, as the germ theory of disease was not widely accepted by American physicians until the early 1880's. Bonner dates the clear acceptance of the theory in Kansas as the late 1880's, and cites a survey in 1889 by the Kansas Medical Society as proof. The survey lists only one negative response to the query "Do you accept the germ theory of fevers?" This would seem a decisive victory for the germ theory, but for many years Kansas physicians would continue their questionable practices in diseases covered by the theory.

Even with this supposed acceptance of the theory in the late 1880's, it was 1889 before any course of instruction was offered in the area concerning this vital subject. This course was offered in Kansas City, Missouri, at the University Medical College after receipt of "a complete outfit for the thorough study of microscopy and bacteriology direct from Germany." Some importance can be attached to this, if we consider availability to be a factor influencing the acceptance of the theory.

Perhaps this short account of the history of the germ theory in Kansas can aid us in understanding the reluctance to accept it, while a tremendous willingness was shown to accept the new rays discovered by Roentgen.

In the case of the x-ray we find a clearly defined physical phenomena which was readily witnessed with one's own eyes. It was evident from the very beginning that the x-ray was a fact to be accepted because one had visual proof by merely looking at the image on a fluoroscope or a photographic plate. It was not nearly so easy to accept the idea that the air we breathe and everything around us was contaminated with millions of invisible germs. The concept that living organisms so small could be the cause of disease was indeed difficult for the average physician to readily accept. There is quite a contrast between this and a life-sized photograph of a broken bone made by means of the x-ray.

It is interesting to note that the practices of Lister were more rapidly accepted than the theory, and that some attempts were made to dissociate the practice from the theory. It may be significant to note that the practical aspects of antiseptic treatment produced more visible results, and therefore were more readily put to use. Because of the nature of the x-ray, it being a physical phenomena, the practical use of it was more emphasized than forming a theory of its cause. Indeed, it might be more valid to compare the acceptance of the x-ray to the adoption of Listerian methods than to acceptance of the germ theory. Here

again we encounter a problem, for usually a single trial would establish the validity of the x-ray, while a series of trials, along with a control group, was necessary to prove anything for the Listerian methods. Even then the proof was only a statistical implication, as opposed to the physical proof of an x-ray photograph. Physicians in those days were less educated in the area of statistical methods, so perhaps were not as impressed as a present day physician might have been.

A second reason for the x-ray being more readily seized as a medical tool than the germ theory was the availability of equipment. Electricity itself was just coming into its own at that time, and therefore most colleges and universities had some apparatus which could be used to conduct the experiment as Roentgen had. Roentgen performed his experiment with only an induction coil and a vacuum tube, and the majority of colleges possessed a Crooke's tube or some other vacuum tube, since a great deal of experimenting was being done with cathode rays at this time. This considerable degree of preparedness in the field of x-ray made experiments much easier than the nearly complete lack of apparatus afforded experimenters in the area of bacteriology. As mentioned earlier, good microscopes were hard to obtain, and had to be imported from Europe.

A third aspect to be considered in comparing the two medical milestones is perhaps the most difficult of all to measure. This is the influence that public opinion and acceptance by the layman has on the practice of medicine. Without public support, a new achievement in the field of medicine will languish in exile until a willingness to accept it finally makes itself felt. Even if a physician suggests a course of treatment, the patient is not obligated to follow it if he does not care to. Such a relationship no doubt made itself felt in the early days of the x-ray and of bacteriology. Here we can appreciate the views expressed by Williston, as mentioned earlier, concerning the control the public had over a physician's success.

If the medical profession itself felt questions about the germ theory, what must the average man have felt? As unlikely as the idea seemed to a doctor, it must have seemed positively absurd to a poorly educated layman. In direct opposition to this we find the early reports of the x-ray in all the newspapers of the day, and no doubt the public was nearly as well informed on the subject as the medical profession in the early stages. The very nature of the x-ray is such that it caught the imagination of the public. Evidence of this great fascination is seen in the public lectures and demonstrations of the marvelous new rays. The lecture at Lawrence, open to the public, and to which admission was charged, is proof of

how interested the people were, and no doubt served to spread the word of this fantastic discovery.

The public being informed and interested in the x-ray, it is easy to understand how much more readily they would accept the suggestion of the doctor that it be used to treat them. In fact, we can assume that many would be eager to have it put to use in their case. No doubt it would even have been considered an exciting subject of conversation to tell their friends how the new x-ray had been utilized in their own illness or injury.

No doubt the excitement of the public about the x-ray prompted many doctors to consider the acquisition of one of the new machines. At that time the ratio of physicians to patients was quite high, and there was an intense sense of competition among doctors for the patients available. Such a competitive spirit would seize upon the local fame to be acquired by owning an x-ray machine. Therefore, it is entirely within the realm of possibility that a doctor would make some sacrifices to own a piece of apparatus which could greatly increase his practice, and therefore his income. Even if a doctor could not own an x-ray machine, there is no question but what it would enhance his reputation if he could take his patients somewhere to be x-rayed.

After examining each of these aspects of the acceptance of the x-ray, we can see a little more easily why it gained such a wide fame and use so rapidly. In all probability the key to the matter lies in the novelty of the discovery and how it was able to capture the interest of professional people and the public alike. Important in this regard is the role that the public played in permitting, perhaps even encouraging, the work of the physician as he sought to grasp this new medical tool. The Kansas physician responded well in this instance, and the resulting early utilization of the x-ray yielded generous rewards for both the physician and the public.

EDITOR'S NOTE: References may be obtained by writing the JOURNAL, 315 West 4th Street, Topeka, Kansas 66603.

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The President's Message

DEAR DOCTOR:

John L. Lattimore, M.D.

John died quietly during the early morning hours on May 29.

Dr. John had many good qualities, but outstanding was his willingness to become involved. In his varied endeavors he showed a deep and sustained interest. He had the rare ability to take a firm position, even on controversial problems, without arousing antagonism from those with whom he differed.

I think of him as a fortunate man—fortunate in his varied interests; fortunate in his many friends; fortunate in his knack of clear analysis and approach to problems.

We, of the Society, are fortunate to have benefited from his council and guidance for these many years. We will miss him.



Sincerely,

A handwritten signature in dark ink, appearing to read "Leo H. Sell". The signature is fluid and cursive.

President



Editorial COMMENT

On July 1 the new health program for the indigent and near indigent goes into effect in Kansas. The federal promise is that these citizens shall be indistinguishable, with reference to their health care, from the remainder of the population. Within the state a budget places a ceiling upon expenditures. So once again the medical profession is in the position of reconciling the difference, either through reduction in payment or by way of regulation controlling utilization.

Actually, as the program nears, things do not appear this black. The budget was designed to pay usual, customary and reasonable charges based upon estimated normal usage. Unless utilization is dramatically increased there will be money enough to pay the claims submitted by providers.

As to regulations, these appear less necessary than before. If health services to recipients under Title XIX are to equate in kind and amount with those available to the remainder of the population then rules can relate only to integrity. The negligible saving, if indeed there would be any saving, through such control will certainly be offset by the disapproval of physicians and by the restrictions these will invoke over patient care.

A special medical advisory committee, appointed by the president, has held one meeting and made the following recommendations to Welfare:

1. Begin the program with the fewest possible regulations.
2. Offer to the medical consultant for Welfare the use of Blue Shield Review Committees, the Kansas Medical Society Medical Advisory Committee, a special committee selected within each council district and committees from at least the larger component societies. The medical consultant

may ask the advice of such committees where instances of suspected abuse may be discovered.

3. The committees will evaluate the question on the basis of what is normal practice within the community.

4. Claim forms and program requirements under Title XIX should approximate as closely as possible those existing under Title XVIII. Certain exceptions immediately come to mind, such as the fact that Title XIX carries no deductibles. Another recommended change is that Title XIX should not require a three day hospital admission before a nursing home may be utilized.

Certain points relating to this program appear self evident, which after they are once accepted, should require no further consideration.

Title XIX eliminates the second class citizenship distinction from those eligible with reference to their health care. Government will pay for necessary treatment required by Title XIX recipients on a self-sustaining basis. Fees will be set at a figure which assures that no other person pays any additional amount to make up a deficit. This applies equally to hospital costs and to physician charges.

The only regulations, consistent with the above, would apply to abuse. Medicine already has controls in this area through hospital and society committees. By making these available to Welfare and by having them serve Title XIX recipients as they serve any other patient a more effective control over abuse is established than through specific regulations. And, what is more important to the concept of this program, the Title XIX patient will in fact thereby be indistinguishable with reference to his health care from the remainder of the population. In no other way can this be accomplished.

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Personalities—IN KANSAS MEDICINE

Mary T. Glassen, Phillipsburg, has been named "Woman of the Year" by the Kansas Business and Professional Women's organization.

Recently elected to active membership in the American Academy of General Practice were **Robert L. Peterson** and **Duane A. Ginavan** of Emporia; **John Weninger**, Wichita; and **Earl Gehrt**, Chanute.

Keith Kelley, Clay Center, attended a medical conference on "Aggressive Management of Acute Myocardial Infarction" in Los Angeles in May.

The Norton city council has appointed **Robert C. Long** city health officer. Dr. Long replaces **A. E. Cooper** who recently resigned.

William Ruth, associate professor at KUMC, attended the annual meeting of the National Tuberculosis Association in Pittsburgh in May.

The American Society of Internal Medicine has announced the election of the following physicians to active membership in the society: **Clifford S. Reusch**, Winfield; **Ira R. Morrison**, Atchison; **Jody Anderson** and **Delmas A. Jackson, Jr.**, of Salina; and **Otto L. Hanson** and **Dwight Lawson**, both of Topeka.

Lee S. Fent, Newton, chairman of the state education committee of the American Cancer Society,

was the guest speaker for the Montgomery County unit's annual dinner meeting held in Independence the first of June. Dr. Fent was introduced by **Albert E. Bair**, Independence, county medical advisor for the American Cancer Society.

The Dodge City Community Junior College presented **Clair C. Conard**, Dodge City, with the Distinguished Alumni Award at commencement exercises in June. Dr. Conard was recognized for his contribution to education. He was a member of the first board of trustees of the college and was re-elected in April of this year.

William G. Null, Salina, spoke on speech therapy at the May meeting of the Saline County Medical Assistant Society.

After 60 years in the practice of medicine, **James R. Smithheisler** of Richmond has announced his retirement. Dr. and Mrs. Smithheisler now live in Homestead, Florida.

Merlynn Colip, Norton and **Paul Powell**, Topeka, have been appointed to the state advisory committee on study of programs to solve problems of alcoholism. The committee was named by the chairman of the Public Health and Welfare Committee of the Kansas Legislative Council.

Paul Johnson, Leavenworth, was recently appointed district coroner of the First Judicial District of Kansas.



The Kansas Press Looks at Medicine

Editor's Note. In this section the JOURNAL reproduces editorials relating to medicine which have appeared in the lay press. An effort is made to include both favorable and unfavorable comments, and the Editorial Board in no instance assumes responsibility for the opinions expressed.

(Editor's Note: This tribute to Dr. John L. Lattimore was written by Bob Hurt, sports editor for the *Topeka Daily Capital*, and appeared in his column, "Capitalizing on Sports.")

People are known, someone once said, by the associations they keep. A little bit of everyone you know rubs off on you.

Which is why it's too bad more people didn't know Dr. John Lattimore, who died Monday at the age of 73. Of course, a lot of people did know Doctor John. He was a noted pathologist, coroner, legislator, avid sports fan, golfer, one-time tackle at Baylor and an all-round good guy.

I got to know John through golf. The game was a passion with him. But it never unbalanced him. I remember Doc struggling up to No. 14 at Shawnee Country Club one day. He shanked, sliced and flubbed, winding up with a nine.

But as he stepped up to the 15th tee, Doc paused and surveyed the scenery. "Beautiful, beautiful," he said. I thought he was being sarcastic. He wasn't. The golfing strife was forgotten. He was drinking in the beauties of a golden-tinged autumn afternoon.

It was a good lesson. Doc never let the the small and temporary discomforts blot out the full picture.

Doc loved the beauty of Shawnee. He waged a one-man war against litterbugs. Hired hands have worked there 15 years without picking up as many Coke bottles, beer cans and candy wrappers as Doc. He was a human vacuum cleaner. He never passed a piece of litter on the links. The back of his gas-powered cart looked like a dump truck after 18 holes.

It was never too cold for golf. He had an old tarp he spread over his legs when he took off

in his cart on a 30-degree day. And he had a hand-knitted wool dickey which looked like it came off the Byrd expedition. Doc had it specially knitted. Typically, he also had three more made for his golfing companions.

One day, one of Doc's old links cronies, Bob Romig, was struck between the eyes with a flying putter. It left a nasty gash. But Doc looked at it and shrugged. He pulled a Band-Aid out of his bag and patched the wound. "It'll be all right," he said. Nothing stops golf. The 16 remaining holes were played.

But it wasn't all right. Four stitches were needed later to close the wound. Doc was kidded about his premature diagnosis.

"No wonder," jibed a friend. "He hasn't worked on a live patient in 20 years."

Doc could take kidding. A couple of years ago, golfing buddies Romig, Ken Stapleton and Emil Von Riessen accompanied Doc on a fishing trip to Table Rock. At the time, Doc was taking shots for rheumatism. It caused his skin to peel off.

Von Riessen explained to the waitress that Doc had leprosy. The waitress wouldn't go near Doc. Someone else had to hand him his food.

A couple of weeks later Von took his boss, Ben Franklin, to the same restaurant where he had the same waitress. "I want you to know my friend Ben Franklin," said Von to the waitress.

A canny look for recollection crossed her brow. "Yeah," she said with a smirk. "I remember you."

Doc was at his best on the first tee. In later years, money was never a problem but his maximum bet

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CURRENT DIAGNOSIS edited by Howard F. Conn, Robert J. Clohency, and Rex B. Conn, Jr. W. B. Saunders Company, Philadelphia and London, 1967. 843 pages. \$19.00.

Changes in methods of diagnoses occur at a speed that rivals changes in therapeutic agents. *Current Diagnosis* is obviously designed as a companion volume to the popular annual series, *Current Therapy* and the organization of the material is similar in the two books. Under the direction of the editors 285 experts have contributed 263 articles on modern methods of diagnosing both common and uncommon diseases. The authors have attempted to give special emphasis to confusing variations of clinical conditions rather than to the classical textbook pictures of diseases so as to aid the physician in coping with patients who have atypical or misleading symptoms and signs.

The contributors have avoided involved discussions of differential diagnosis, but the rather extensive index undertakes to provide cross references to all of the symptoms, signs and findings mentioned in the text. This seems to be a good way to help the practicing physician solve his problems in differential diagnosis. It seems that the value of the book would have been increased, however, by the inclusion of a section on newer diagnostic methods (for enzymes, electrolytes, proteins, hormones, antibodies, etc.) that gave general statements on the theory of the tests, their significance, and the causes of variations from normal.

The book is well printed on high quality, non-glare paper, and is nicely bound.—J.D.R.

TRACY'S, THE DOCTOR AS A WITNESS by William J. Curran. 2nd Edition. W. B. Saunders Company, Philadelphia, 1965. 196 pages. \$5.75.

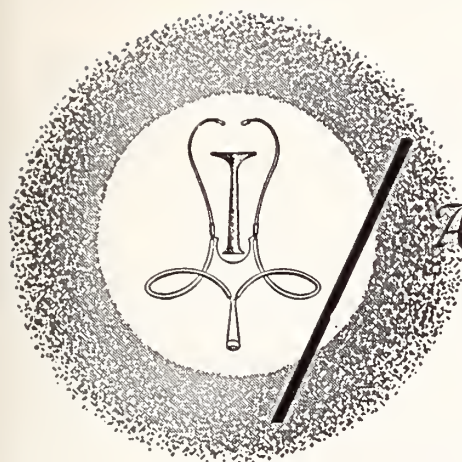
This is one of many books written in the legal aspects of medicine that the doctor can understand and enjoy. It is one of the "A.B.C." books of the medico-legal field. The how, what and why is adequately covered in a simple, logical and orderly fashion. Numerous examples, prepared questions and answers, together with brief summaries of actual cases are used throughout the book. The approximately 190 pages of interesting, readable material relating to the legal aspects of the practice of medicine will help the average physician get acquainted with courtroom procedures and overcome his reticence to serve intelligently as a witness.—F.C.B.

MODERN HOME REMEDIES AND HOW TO USE THEM by Morris Fishbein. Doubleday & Company, New York, 1966. 129 pages. \$3.25.

This is a book in which Dr. Fishbein discusses a variety of home care problems and is probably intended for the lay public. It would serve as an appropriate addition to a family health care library and could be recommended to patients for reading.

This book would be of little value to the physician from an informative point of view. It would be recommended to the general practitioner involved in family health programs as a source of suggested reading for the patient.—R.D.N.

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Announcements

Professional meetings, conferences, and postgraduate courses of national importance are listed for the Doctor's CALENDAR. Notice of the session is posted in advance to allow the physician time to make preparations.

An association of physicians interested in Kansas City General Hospital and Medical Center is being formed. A bi-monthly scientific and news bulletin will be published and sent to interested physicians. For more information, write to Dr. Russell Jones, Kansas City General Hospital, 24th and Cherry, Kansas City, Missouri 64108.

AUGUST

- Aug. 7-10 National Medical Association, Chase-Park Plaza, St. Louis. Write Adm. Secretary: Samuel C. Smith, 520 W Street, N.W., Washington, D. C. 20001.
- Aug. 11-13 International Doctors in Alcoholics Anonymous, Airlie, Warrenton, Virginia. Write: Earl H. Mitchell, M.D., 3509 Dunlop Street, Chevy Chase, Maryland 20015.
- Aug. 17-19 Rocky Mountain Radiological Society, Brown Palace, Denver. Write: Robert W. Lackey, M.D., 4200 E. 9th Ave., Denver 80220.
- Aug. 27-Sept. 1 American Congress of Rehabilitation Medicine, Americana Hotel, Miami Beach, Florida. Write: C. C. Herold, Exec. Dir., 30 N. Michigan Ave., Chicago 60602.
- Sept. 15-23 American Academy of General Practice, Dallas. Write: Mac F. Cahal, Exec. Dir., Volker Blvd. at Brookside, Kansas City, Missouri 64112.
- Sept. 21-24 American Medical Writers Association, Palmer House, Chicago. Elizabeth G. Dailey, Exec. Sec., P.O. Box 267, Arlington, Virginia 22210.
- Sept. 25-27 Kansas City Southwest Clinical Society, Hotel Muehlebach, Kansas City, Missouri. For Information: Robert S. Mosser, M.D., Director of Clinics, 3036 Gillham Road, Kansas City, Missouri 64108.

SEPTEMBER

- Sept. 7-9 American Association of Obstetricians and Gynecologists, Hot Springs, Virginia. For Information: Robert B. Wilson, M.D., 200 First Street, S.W., Rochester, Minnesota.
- Sept. 10-15 Flying Physicians Association, Williamsburg, Virginia. Write: Albert Carriere, 332 S. Michigan, Chicago 60604.

OCTOBER

- Oct. 2-6 American Association for Laboratory Animal Science (formerly Animal Care Panel), Sheraton-Park Hotel, Washington, D. C. Exec. Sec.: Joseph J. Garvey, 4 E. Clinton, Joliet, Illinois 60434.
- Oct. 2-6 American College of Surgeons, Conrad Hilton, Chicago. Write: John P. North, M.D., 55 E. Erie, Chicago 60611.
- Oct. 4-5 Annual Midwest Interprofessional Seminar, *Diseases Common to Animals and Man*, University of Missouri, Columbia. Write: Dr. D. C. Blendon, Dept. of Veterinary Microbiology, Section of Public Health, School of Veterinary Medicine, University of Missouri, Columbia 65201.

POSTGRADUATE COURSES

University of Colorado:

- July 31-Aug. 4 *Pediatrics* (Estes Park)
- Aug. 7-11 *Internal Medicine* (Estes Park)

Oct. 2-6 *Hospital Medical Staff Conference*
(Estes Park)

Oct. 2-6 *Premature Infant Care*

For further information, write the Office of Postgraduate Medical Education, University of Colorado School of Medicine, 4200 E. Ninth Avenue, Denver 80220.

Aug. 14-16 National authorities in the field of sports medicine will be lecturers at a special postgraduate course of the American Academy of Orthopaedic Surgeons, Skirvin Hotel, Oklahoma City. Invited to attend the three-day course of lectures and audio-visual demonstrations are orthopaedic surgeons, general physicians, high school and college team physicians and others with a medical interest in the care of the athlete. It is to be sponsored by the Academy's Committee on Sports Medicine in cooperation with the U. S. Olympic Medical and Training Services Committee and the Department of Orthopaedic and Fracture Surgery, University of Oklahoma School of Medicine. For application forms and further information, write to Don H. O'Donoghue, M.D., 1111 N. Lee St., Oklahoma City 73103, or the American Academy of Orthopaedic Surgeons, 29 E. Madison St., Chicago 60602.

Oct. 14-20 *Annual Otolaryngologic Assembly*, Illinois Eye and Ear Infirmary, Chicago. Postgraduate basic and clinical program designed to bring specialists current information in medical and surgical otorhinolaryngology.

A separate, correlated course *Head and Neck Radiology*, will be conducted on October 12-13 by the Department of Radiology. Write: Department of Otolaryngology, University of Illinois College of Medicine, P.O. Box 6998, Chicago 60680.

Oct. 26-28 *Today's Hospital Problems: An Interdisciplinary Approach*, Tides Hotel and Bath Club, Redington Beach, Florida. A leadership course for Chiefs of Staff, Hospital Administrators and Governing Personnel (or Trustees), sponsored by the Mound Park Hospital Foundation and the University of Florida. Rights to limit registration reserved by the sponsors. \$75 fee. 18 accredited hours by AAGP, if desired. Address: Postgraduate Medical Education, Mound Park Hospital Foundation, Inc., St. Petersburg, Florida 33701.

Kansas Press

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was 25 cents. He negotiated those two-bit wagers like it was a bricklayers' contract.

A couple of years ago, Doc lost the sight in his left eye. The first time he showed up with a patch over the eye I said, without thinking, "That patch won't get you any extra strokes."

Doc fixed me with his one good eye. "Young man," he said, "you'll never hear me asking for any."

And he never did. He had enough ailments to keep a daytime serial in business for a year. But he never complained. And the ailments weren't minor. Twice he went to Houston to have veins in his legs replaced with plastic tubes.

Recently, his heart started flickering. A couple of weeks ago it got worse. His doctor advised inactivity. No golf.

Doc told a friend that day he was facing a big decision. "I either go home and wither," he said, "or I enjoy what few days I have left."

The next day he played golf.

There is sadness in the loss. There is joy in knowing Dr. John Lattimore led a full life.

NEW MEMBERS

The JOURNAL takes this opportunity to welcome these new members into the Kansas Medical Society.

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Topeka, Kansas 66612

Savings Bond News—

New Freedom Shares Savings Note— A Companion to Series E Bond

The new Freedom Shares Savings Note is the Treasury's bonus security offered as a companion to the familiar Series E Bond.

All persons participating in regular Savings Bonds purchase programs supported by a formal agreement are eligible to purchase the new Freedom Shares.

Secretary Fowler, in announcing the Freedom Shares, said that "The New Freedom Share is designed to reach new savers and savings rather than to divert savings from other savings institutions."

Freedom Share Facts

Q. What are "Freedom Shares?"

A. "Freedom Shares" is the designation given to the Treasury's new Savings Notes which was offered to the public on May 1, 1967. Freedom Shares may be purchased only with the purchase of a Series E Savings Bond.

Q. Do I understand that Freedom Shares cannot be bought separately?

A. That is correct. Freedom Shares must be *bought in conjunction with* Series E Bonds of the same or larger face amounts. For example, a \$25 Freedom Share may be bought with each \$25 Series E Bond purchase on a regular plan. The total price would be \$39 (\$20.25 for the Freedom Share and \$18.75 for the Series E Bond).

Q. Who may buy Freedom Shares?

A. Any individual who purchases Series E Bonds on a regular formal plan.

Q. What do you mean by "purchased on a formal plan?"

A. There are two types of regular formal plans. (1) Bond-A-Month where one banks. (2) Payroll Savings Plan where one works.

The Bond-A-Month Plan. This is a method of regular Savings Bond purchase through which a depositor authorizes his bank to deduct from his account an amount sufficient to purchase a Savings Bond (and also a Freedom Share, if he so

elects) once each month. Bond-A-Month requires a signed authorization which continues in effect until revoked in writing. The minimum Bond-A-Month purchase requires an account debit of \$18.75 for the Series E Bond alone, or \$39 for the Bond and Freedom Share combination.

Payroll Savings is a method of regular saving for Savings Bond purchases through which an employee authorizes his employer to withhold a portion of his pay and to accumulate an amount sufficient to purchase a Savings Bond (and also a Freedom Share, if he so elects) for him. The Payroll Savings Plan must be supported by a signed agreement. Since Payroll Savings permits partial purchase of Savings Bonds (and Freedom Shares) a variety of monthly combinations is possible.

Q. How does one enroll in Bond-A-Month?

A. This is arranged through one's bank.

Q. What is the interest rate on Freedom Shares?

A. Like Series E Bonds, Freedom Shares are bought at a discount and the increase in the face value of the instrument represents the interest earned. Freedom Shares earn at the rate of 4.74 per cent, if held to maturity which is four and a half years.

Q. Does the same rate now apply to Series E Bonds?

A. No. E Bonds continue to return an average of 4.15 per cent when held to their seven-year maturity.

Q. Can Freedom Shares be cashed before maturity?

A. Freedom Shares may be redeemed after being held for one year. Series E Bonds, of course, may be redeemed after two months.

Q. In what denominations are Freedom Shares offered?

A. Freedom Shares are offered in four denominations, as follows: \$25 (Cost, \$20.25); \$50 (Cost, \$40.50); \$75 (Cost, \$60.75); \$100 (Cost, \$81).

Q. Can I buy as many Freedom Shares as I want, as long as I purchase Series E Bonds of the same or larger face amount?

A. No, there are limits. One can buy Freedom Shares with a total face value of not more than \$100 per month. This is true of either Bond-A-Month or Payroll Savings.

(Continued on Page 320)

KANSAS STATE DEPARTMENT OF HEALTH
TOPEKA, KANSAS
Summary of Cases Reported in March, 1967 and 1966
Division of Preventable Diseases—Division of Vital Statistics—Kansas Morbidity Incidence

<i>Diseases</i>	<i>March</i>		<i>5-Year Median 1963-1967</i>	<i>January-March, Inclusive</i>		<i>5-Year Median 1963-1967</i>
	<i>1967</i>	<i>1966</i>		<i>1967</i>	<i>1966</i>	
Amebiasis	1	—	1	4	1	2
Aseptic meningitis	—	—	—	—	—	—
Brucellosis	—	—	—	—	1	1
Diphtheria	—	—	—	—	—	—
Encephalitis, prim., infect.	1	—	1	1	—	2
Encephalitis, post-infect.	—	—	*	—	—	*
Gonorrhea	278	228	228	902	713	713
Hepatitis, infectious	15	21	23	49	60	64
Meningococcal meningitis	—	—	1	1	4	4
Pertussis	—	1	1	—	2	4
Poliomyelitis	—	—	—	—	—	—
Rheumatic fever	—	—	—	2	—	2
Salmonellosis	29	12	17	47	36	43
Scarlet fever	11	17	17	44	50	50
Shigellosis	2	—	4	7	20	20
Streptococcal infections	432	289	289	1079	845	845
Syphilis	62	85	85	242	264	256
Tinea capitis	7	4	6	13	14	14
Tuberculosis	23	42	23	54	83	59
Tularemia	1	—	—	5	—	3
Typhoid fever	—	—	—	—	1	—

* Statistics for 5-year median not available.

SMALLPOX EPIDEMIC IN BOMBAY

A high level of suspicion of smallpox is urged in the diagnosis of international travelers, particularly those with a history of a visit to India, who present symptoms related to smallpox, such as fever, backache, and any type of rash. Rash can be highly variable in partially immune persons.

This warning is based on reports to the World Health Organization and the Foreign Quarantine Program of the National Communicable Disease Center in Atlanta, Georgia, which indicate that smallpox is on the increase in India, and is considered epidemic in Bombay. The disease has been introduced into Europe by three tourists returning from India. One of these cases is a physician with an apparently valid history of smallpox vaccination. As yet, no cases have occurred in the United States. The American Medical Association and the American Hospital Association are cooperating in alerting the health professions of this outbreak.

Book Reviews

(Continued from Page 314)

YOUR HEART HAS 9 LIVES by Alton Blakeslee and Jeremiah Stamler. Pocket Books, Inc., New York. 265 pages. 75c.

This book describes the dangers of developing heart trouble and the signals to look for—namely—high blood pressure, high cholesterol, obesity, excessive eating (of the wrong foods), too little exercise and physical activity, diabetes, excessive cigarette smoking, tension, stresses, and heredity.

The author describes the pre- and post-coronary patterns, especially what can be done to improve rehabilitation and provide a longer life.

It is well written, easy to understand and, as Dr. Paul Dudley White states, "The best book of its kind available today."—*W.N.*

The Brain Drain

Europe's Young Physicians Seek Opportunities in U.S.

**Prepared by the
American Medical Association**

IN THE PAST EIGHT YEARS nearly 125,000 of Europe's best educated young people have in one way or another sought admittance into the United States.

They are graduate physicians in search of high-quality advanced education and the right to work unfettered by red tape and restrictions. Not finding it in their home-lands, they turned to the United States.

Actually only a fraction of the 15,000 to 20,000 hopeful young doctors seeking entry each year ever arrive here. Figures of the Association of American Medical Colleges show that of those who take the Educational Council for Foreign Medical Graduates examination, only about one fifth are accepted.

Still, that means that about 4,000 are arriving from Europe annually to work and study in medical schools and hospitals. And a large number of these are staying to practice medicine.

They are of all nationalities—German, French, Austrian, Swedish, and especially English. And their loss has helped create what for Europe is a major problem—the so-called "brain drain."

Medicine is not the only branch of science involved in the brain drain. Europe is also losing engineers, chemists, physicists—in fact scientists and technicians in all areas—to the United States. But the major exodus seems to be among the medically oriented.

The implications of the flight of its young scientifically educated has European leaders frankly worried. There is concern that the continent has become undeveloped scientifically and technologically in comparison with the United States. What's more, the gap is growing.

Even the Russians are fretful. For while they permit no emigration, they feel that because of the absence of scientific give-and-take in Europe generally, their own scientific programs are suffering.

Premier Kosygin of the Soviet Union made this clear during his visit to France. He proposed a "technological alliance" between Russia and Western Europe in order to end what he indicated was the dependence of Europe on advances made in the United States.

Far more concerned with the outcome of the brain drain, however, is Great Britain. The emigration of

its young physicians has threatened Britain's National Health Service (NHS) with collapse.

According to their own surveys, about one third of Britain's medical graduates are leaving the country each year. What's more, the number of medical students going into training has been falling steadily.

An eminent barrister, R. H. Davison, outlining the British health service dilemma, reported in the *British Medical Journal*: "Not only has the NHS provided outrageous terms and conditions of service, it has completely failed to inspire respect among the younger members of the profession who see through its Fabian humbug."

He noted that even the supply of doctors being imported from Pakistan and India to help fill the vacuum of British doctors was dwindling, and criticized the government suggestion "that the advent of the Common Market will permit us to import Italian doctors to run our Health Service."

"Clearly," Davison wrote, "fourteen years of socialism have made us completely shameless, for no one can believe these policies to be in the national interest."

That was five years ago. Since then the tempo of emigration from Britain has accelerated despite government efforts.

Why? The consensus of those British physicians arriving in this country seems to be that they have no wish to be "hand maidens of the government."

As one young resident said: "We're not exactly forced into servitude by the government, but we're not exactly free to practice our profession either."

"At least in America there is still a choice. But what would happen if that choice were removed, as it has been in Europe? Where would American doctors emigrate to?"

What has caused the drain of European brains? Is it money? Or is it something else?

Partly it is money. British interns say they work an average 100 hours a week for less than \$200 a month. That figures out to about 45 cents an hour.

But the greater issue clearly is one of "scientific climate." Over-regulated conditions have served to stymie scientific inquiry; without scientific inquiry

there is lack of stimulation, and without stimulation scientific advancement suffers. So goes the analysis of what's wrong with science in Europe.

This, of course, is an oversimplification. But the fact is that the young, scientifically-oriented have shown by their desire to vacate Europe that something about the scientific climate there is inadequate, if not stifling. And whatever it is, the medical school graduates of Europe have turned to the United States in order to get into the mainstream of medical science.

American medicine became a lure to European doctors following World War II when it became clear that the United States had emerged in the forefront of medicine. And despite the efforts by some to downgrade the image of American Medicine in order to foster an European system of medicine in this nation, the United States has continued to better its standing. If this were not so the "brains" of Europe wouldn't be seeking entry. For they crave scientific excellence along with freedom to practice their profession.

How good is medical science in America? A clear-cut answer is not easily obtained. Some critics, basing their argument wholly on one statistic or another, contend it is not very good. They maintain that because the infant mortality rates and the average life span in certain small European nations are somewhat better than our statistics these nations have better medicine.

Actually such statistics fail dismally as a yardstick for measuring the quality of a nation's medicine. Totally ignored in the conjectures based on these tables are such factors as genetic makeup, economic conditions, educational levels and other matters including abortion laws, all of which are reflected in statistics. For example, one of the best assurances of a ripe old age is to be born into a family with a history of longevity. This is a matter of genes, and has nothing to do with medicine. Medicine of course, plays a role in longevity, but it is only one factor of several. Similarly, one of the best buffers against infant mortality is a mother well educated in the facts of childbearing before she becomes pregnant.

The fact is, of course, medical and scientific quality cannot be based on one lone statistical table. Rather it must be judged on the sum total of numerous factors. Such a compilation clearly indicates that the young Europeans are probably right—the United States is the leader in medical science.

In the 21 years since World War II, 23 Americans have been awarded the Nobel Prize in medicine and physiology. That's more than was won by physicians and scientists from all of the other countries of the world combined.

In the same period, well over half of all the major

new drug discoveries were developed in this country. As a matter of fact, 80 per cent of the prescriptions written today could not have been written ten years ago because the drugs didn't exist.

But medical progress cannot be measured only in the laboratory. It must also be measured in terms of people, disease, and facilities. Thus the fact that America was building 750 hospitals in the same time that England was building one also enters the picture.

So do such matters as the rate of death from various diseases. The death rate from cancer in America, for example, is well below the rate of Western Europe. And since cancer is treatable to some extent, our lower death rate could be interpreted as better medical treatment. The same holds true for other treatable diseases, including tuberculosis, pneumonia, strokes and influenza. All of these kill fewer people here, per capita, than in Western Europe.

What it all adds up to is this: Four and a half million Americans alive today would be dead if medicine were practiced with the same amount of knowledge and the same tools as it was just 25 years ago. In that time span—in the past 25 years—medicine has learned more than it learned in the previous 50 centuries.

No one can assign a nationality to such knowledge. It is world wide. But when it comes to teaching and applying that knowledge, the rest of the medical world looks to the United States for leadership.

Savings Bond News

(Continued from Page 317)

- Q. Does this impose a new limit on Series E Bond purchases as well?
- A. No. The limit of Series E Bonds remains at \$20,000 per year, per individual purchaser.
- Q. Are Freedom Shares subject to taxation?
- A. Since the same tax provisions apply to both the Series E Bond and Freedom Shares, each enjoy the same tax advantages and privileges. Interest earned by either is exempt from state or local income tax. The interest earned by both is subject to federal income tax, but reporting may be deferred until maturity, redemption, or other disposition. Both Series E Bonds and Freedom Shares are subject to state and federal estate and inheritance, and other excise taxes.
- Q. Will Freedom Shares be granted an extended maturity as E Bonds have been?
- A. Under existing law and terms, there is no provision for such an extension.



CARL R. BURKHEAD, M.D.

Dr. Carl R. Burkhead, Wichita, died on May 20, 1967. He was 79 years old.

Dr. Burkhead was born at Mound City, Kansas, on January 17, 1888. He graduated from the University of Kansas School of Medicine in 1919 and moved to Wichita to establish his practice in internal medicine.

He was a member of several professional organizations and the College Hill Methodist Church in Wichita.

JOHN L. LATTIMORE, M.D.

Dr. John L. Lattimore, 73, Topeka, died on May 29, 1967, in a Topeka hospital.

He was born March 11, 1894, in Texas and received his medical degree from the Fort Worth School of Medicine in 1918. He had lived in Topeka for many years. Dr. Lattimore was a well-known pathologist and had been district coroner since 1960. He served in the Kansas legislature for eight years and on the Board of Regents of Washburn University for 15 years. He was a past president of the Kansas Medical Society and an officer in the Society for 25 years. He was a past president of Kansas Blue Cross and the American Society of Clinical Pathologists.

Dr. Lattimore is survived by a son and daughter.

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NO VIII

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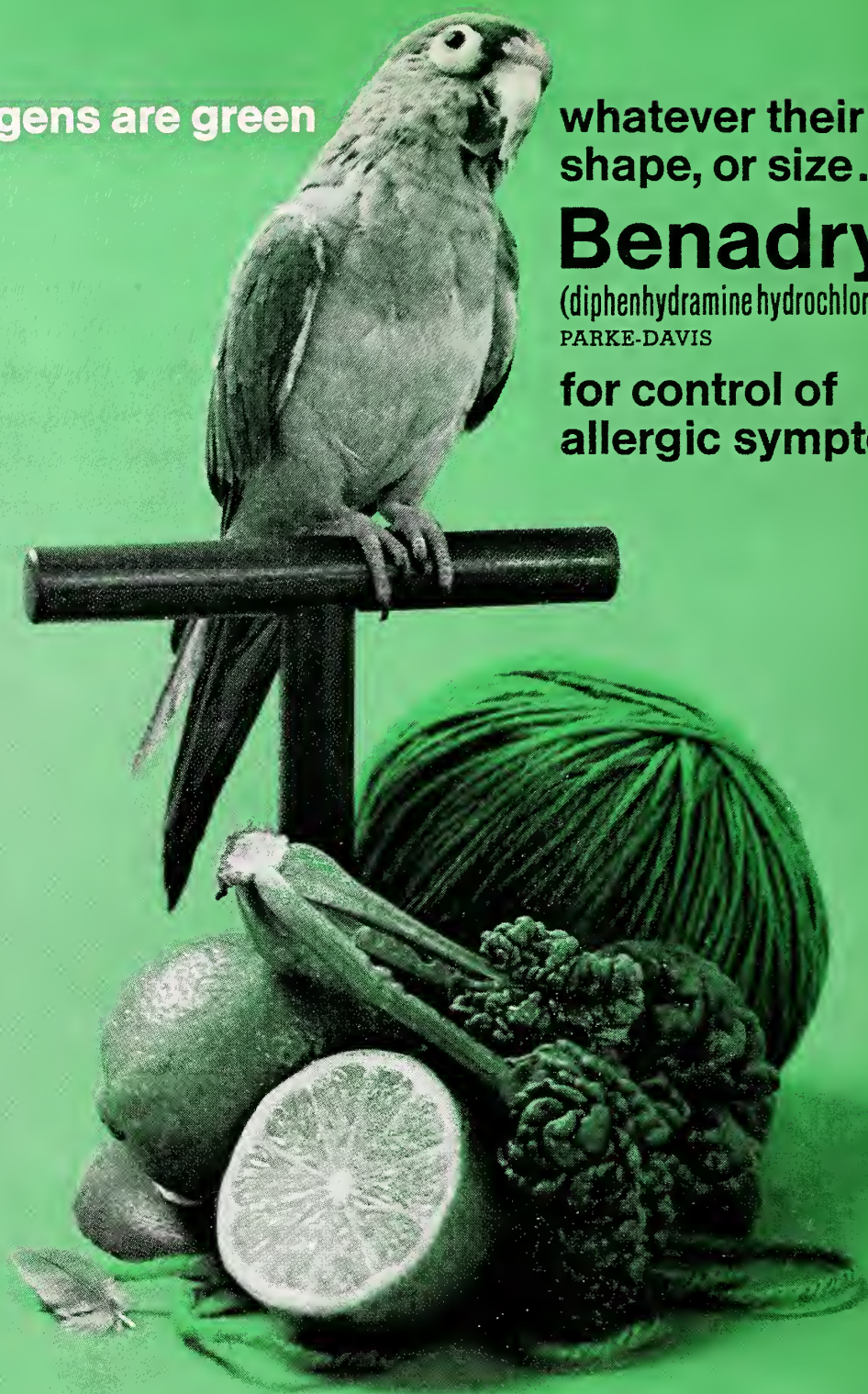
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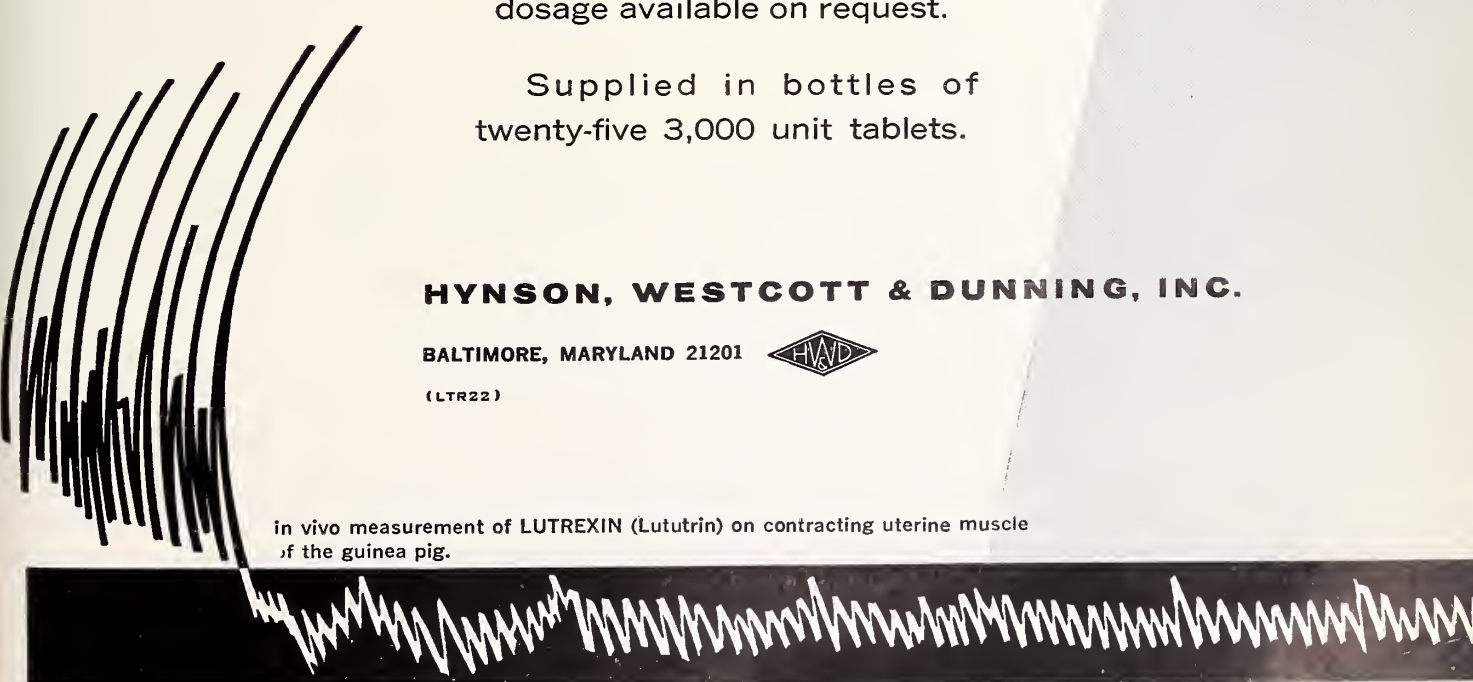
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The JOURNAL of the KANSAS MEDICAL SOCIETY

Contents for August

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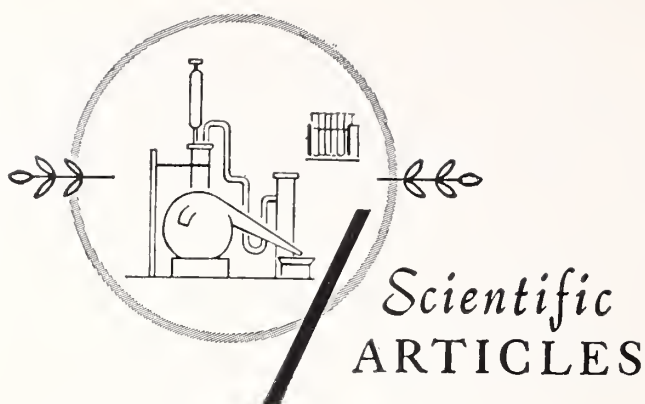
Associate Editors: Jesse D. Rising, M.D., Kansas City; Donald P. Trees, M.D., Wichita.

Managing Editor and Advertising Manager: Mary Rogers, 315 West Fourth Street, Topeka 66603.

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Fourth
Annual Issue
American College of Surgeons
Kansas Chapter



Intestinal Granulomas

Chronic Nonspecific Granulomas of the Right Colon

ADOLPH N. PELLEGRINI, M.D., F.A.C.S., and
LOUIS J. CENNI, M.D., F.A.S.C., Topeka*

CHRONIC NONSPECIFIC granulomas of the right colon remain relatively uncommon surgical lesions. Their main point of interest lies in the uncertainty of differential diagnosis from malignant tumors, particularly in the right half of the colon. These pseudotumors must be considered malignant till proven otherwise. Not only is the surgeon confronted with entities that clinically, radiologically, and at operation are undistinguishable from cancer, but he is faced with the immediate decision whether to perform a radical "cancer" procedure or not. Two such atypical lesions of the right colon recently encountered at the Topeka Veterans Administration Hospital serve to focus discussion on this problem:

Case Reports

1. D.A.J., 49-year-old male veteran, was transferred to the surgical ward from the Psychiatric Service on April 15, 1963, because of a mass in the right side of the abdomen. The patient's complaints were increasing constipation, abdominal cramps, distention, and a weight loss of 40 pounds during the past three to four months. Past history revealed an appendectomy in 1957, hemorrhoidectomy in 1959. Although the patient had been stationed in southeastern Europe during World War II, he denied parasitic

diseases. On physical examination a rounded, nodular, rubbery, fixed, moderately tender mass measuring 10 cm. in diameter was found in the right side of

Chronic nonspecific granulomas of the right colon are discussed, and two cases presented. These pseudotumors are often undistinguishable from malignant neoplasms. Right hemicolectomy is suggested as treatment of choice.

the abdomen. The abdomen was distended, with active bowel sounds. Laboratory data were within normal limits. There was no anemia. The white count was normal. Plain x-rays of abdomen, gall-bladder series, and excretory pyelograms were negative. Barium enema revealed a complete filling defect in the area of the cecum (*Figures 1 and 2*). Diagnosis of possible carcinoma of the cecum was placed, and bowel prep undertaken. At laparotomy, a large, irregularly defined, nodular, hard mass involving and obstructing the ascending colon just above the cecum was found, and right hemicolectomy performed. It was our impression at time of resection that this was definitely a carcinoma of the right colon. Pathological report revealed a chronic nonspecific granuloma of the right colon (*Figure 3*). The patient recovered rapidly from the surgery, and has been well ever since.

* From the Surgical Service, Veterans Administration Hospital, Topeka, Kansas.

Presented at the annual meeting of the Kansas Chapter, American College of Surgeons, Topeka, October 23, 1966.

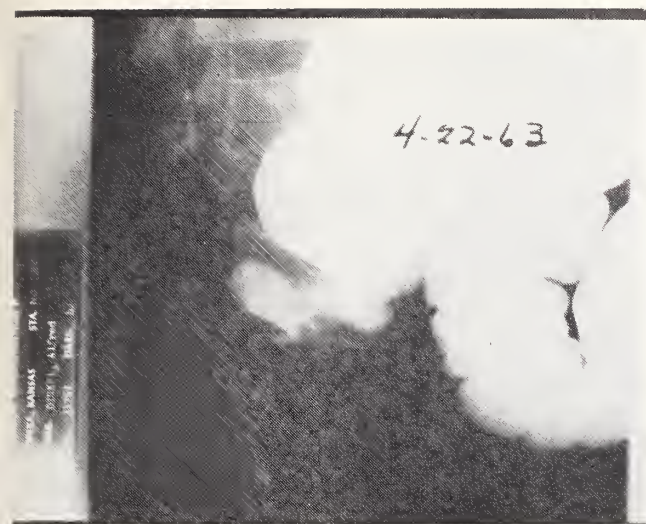


Figure 1

2. C.E., 64-year-old male patient, was transferred to the surgical ward on May 31, 1963 because of partially obstructing lesion of the right colon, detected on barium enema. The patient was an extremely poor risk due to chronic bronchitis, emphysema, and fibrosis of the lungs, with severe pulmonary insufficiency. The lesion in the ascending colon had been radiologically described as a constant rigid narrowing, with irregular mucosal pattern (Figures 4 and 5). Other x-rays were normal, except for the pulmonary pathology. Laboratory data were not

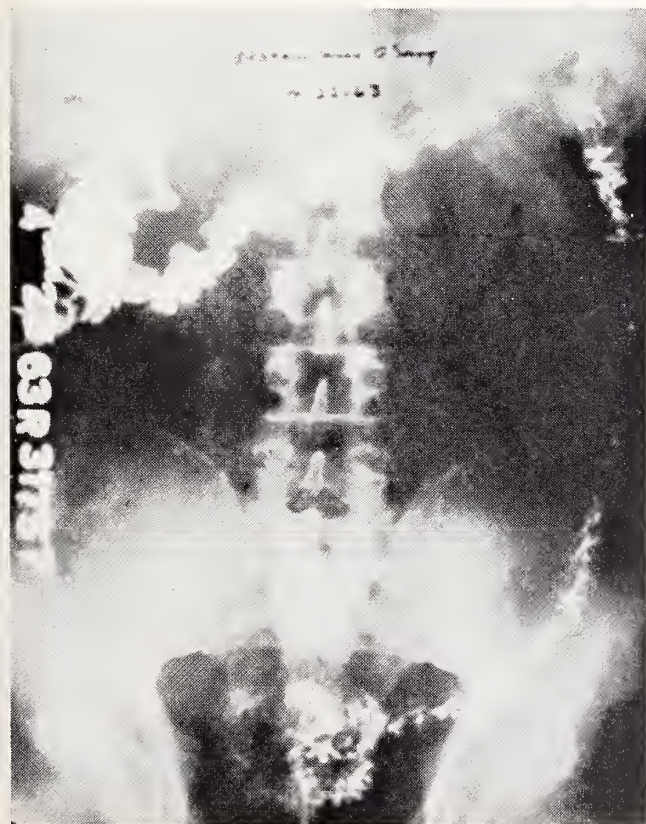


Figure 2

otherwise remarkable. No anemia was present. No mass could be palpated in the right abdominal quadrants. A perianal fistula was present. Although the patient was a poor risk, we were committed to perform surgery for a lesion highly suggestive of a carcinoma of the right colon. After general and bowel preparation a laparotomy was performed. A huge, irregular, nodular mass was found in the ascending colon, adherent to the lateral gutter and extending into the perirenal fat. A right hemicolectomy was performed. Pathological report was returned, to our surprise, as a chronic nonspecific granuloma of the right colon (Figure 6). Postoperative course was stormy immediately after the surgery, due to pulmonary insufficiency and aspiration pneumonia. Tracheostomy was performed, and all possible medical support, including massive antibiotics, cortisones, and digitalis were given. The patient never fully re-

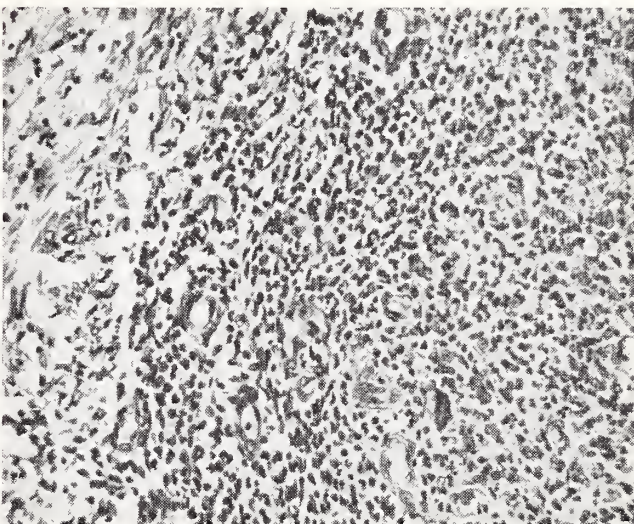


Figure 3

covered from the surgery, and he expired of bronchopneumonia and cardiac failure on the fourth postoperative day.

Discussion

Virchow, father of modern pathology, described nonspecific granulomas of the colon in the last century. Lord Moynihan focused surgical interest on the problem in his monograph, *Mimicry of Malignant Disease in the Large Intestine*. Mayo contributed several cases of chronic inflammatory pseudotumors of the colon, many related etiologically to diverticulitis or appendicitis. We refer to the original works of Moynihan, Mayo, Robson, Tietze, Moschowitz and Wilensky, Moch, and more recently to those by Wilson, Dockerty, D'Alonzo, Svane, etc. for the historical and clinicopathological framing of the subject.

The etiology is uncertain. Several authors have postulated subacute perforation of unknown solitary

diverticulum; mistreated appendicitis; foreign body; stercoral ulcer of cecum; chronic ischemic changes due to peripheral mesenteric vessels obstruction; repeated traumas to right side of abdomen; chronic adhesions, with angulation and "pull" effect over bowel; low grade mesenteric adenitis; chronic retroperitoneal inflammation.

There are a number of cases reported by French and South American authors from tropical and subtropical areas of the world (Argonz, Carcassonne, *et al.* Gallart-Esquerdo, Leibovici, *et al.* Rios Bruno). The presence of endemic tropical diseases in these areas, and the relative lack of laboratory facilities makes their etiology uncertain.



Figure 4

Symptoms reported in order of frequency in the literature are: right-sided abdominal pain; abdominal distention; progressive obstruction; nausea and vomiting; mass in right abdominal quadrants; anorexia; diarrhea; fever; weight loss; formation of abscess and fistula of abdominal wall.

With respect to the differential diagnosis amebiasis, blastomycosis, bilharziosis, actinomycosis may cause granulomas in tropical regions. The specific granulomas of tuberculosis are well known, but are now uncommon in this country. Nearly obsolete in this country are the granulomatous lesions of syphilis and granuloma venereum causing pseudotumors of the large bowel. Differential diagnosis of all these



Figure 5

entities requires a wide range of microbiological and immunological tests. The tropical granulomas may increase in frequency in this country, due to air travel, and military personnel returning from Southeast Asia. Differentiation of granulomas from malignant tumors of the right colon may be difficult, even at the operating table and upon frozen sections. It is well known that a perforating adenocarcinoma may be surrounded by inflammatory reaction, and any biopsy taken may be too superficial for diagnosis. There is always the possibility of a perforated diverticulum of the right colon, with surrounding inflammatory mass.

Regional enteritis, with its skipped areas, fistulas and radiological signs, and chronic ulcerative colitis can usually be differentiated.

Pathology

Pathologically, granulation tissue is formed during the repair of injured tissue, with prolonged injury



Figure 6

inducing excessive granulation. At different stages the connective tissue may contain fibroblasts, epithelioid cells, lymphocytes and plasma cells. Giant cells may be present. With aging of the granuloma, vascularity and cellularity are reduced, and scar tissue ensues.

Treatment

While conservative treatment and limited surgery may be advocated for the specific and tropical granulomas of the right colon, resective surgery is usually curative in chronic nonspecific granulomas of the right half of the colon. The surgeon is confronted with irregular, ill-defined, solid tumors of the ascending colon. Frequently the size of the tumors is much larger than expected from x-ray studies. Often cancers have an outside shell of chronic inflammation and frozen sections have been reported as inflammatory when in reality the inner core is formed by tumor. Furthermore, the taking of deeper frozen sections may contribute to spread of malignant cells.

We advocate, after reviewing the literature, as well as from our limited experience, right hemicolectomy in these cases. The lymphatic regional drainage should be included in the specimen removed. These right hemicolectomies should be planned and carried out as if they were performed for cancer of the right colon.

There are other reasons, technical and anatomical, to favor en bloc resection of the right colon, with ileotransversostomy. These are variations of the vascular arcade of the right colon, differences in size of ileum and ascending colon, and the fact that a good anastomosis is better placed in bowel devoid of inflammatory or malignant changes. Functional changes after right hemicolectomy are minimal, mostly represented by self-limited diarrhea.

Prognosis of the chronic nonspecific granulomas of the right colon is usually excellent after resection. Cases are found in the older literature pointing out that even with no surgery, and short of total obstruction, some of these pseudotumors may resolve, and finally disappear. This may also occur after short-

circuiting procedures, or two-stage operations, but is less often seen in modern surgery, where possible cancer of the bowel is resected, impending obstruction treated, and the risks of hemicolectomy have been minimized.

Acknowledgement

The authors wish to thank Dr. Samuel Zelman for his assistance in the preparation of this paper.

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Supracondylar Fractures—

Experience With Treatment of Patients With Supracondylar Fracture of the Femur

JOHN J. WERTZBERGER, M.D., and
LEONARD F. PELTIER, M.D., Ph.D., *Kansas City, Kansas**

Introduction

SUPRACONDYLAR FRACTURES of the femur present special problems in management if prolonged knee immobilization is necessary in the treatment of the patient. The results of such cases are far from ideal. To preserve useful knee motion, treatment should be directed toward stable fixation of the fracture site and institution of active knee motion as soon as possible.

Patient Material

Forty-four patients with 45 supracondylar fractures of the femur have been treated at the University of Kansas Medical Center from 1955 to 1966. Twenty-two patients were male and 22 female. The youngest patient was two years old and the oldest ninety-two. The age incidence of supracondylar fractures was evenly distributed from the first through the eighth decade in this series. Contrary to the report of Wade¹ osteoporosis did not appear to be a major etiologic factor in production of the fractures in this series, and only two patients over 60 years of age had pre-existing hip or knee disabilities.

Mode of Injury

Twenty-two (50 per cent) of these patients sustained their fractures in automobile accidents. Two patients were injured in motorcycle accidents. The remainder of the patients were injured as a result of less violent trauma including loss of balance and a fall, tractor accidents, gunshot wounds, and one patient's femur was fractured during the reduction of a femoral head prosthesis at another hospital. Two patients died as a result of multiple injuries.

Types of Fractures

The common types of supracondylar fractures of the femur are transverse, condylar, Y and T, and comminuted fractures. Twenty-nine per cent (13) of the fractures in this series were compound, which is a high percentage as compared to other series.² One patient had bilateral supracondylar fractures.

Sixteen of 45 supracondylar fractures of the femur were treated by open reduction and internal fixation, the majority being Rush Pin fixation. Multiple injuries are difficult problems from the standpoint of both treatment and nursing care. Open reduction and internal fixation speeds mobilization of the severely injured patient while permitting early knee motion. Union occurred in all Rush Pin fixations. One superficial wound infection occurred following backing out of one pin. This method of fixation provides a simple procedure with minimal surgical dissection, resulting in good fixation for early active and passive motion of the knee without weight bearing.

Seven patients had accompanying fractures of the contralateral femoral shaft while one patient had a fracture of the ipsilateral femoral shaft. The occurrence of a high percentage of open fractures and concomitant femoral shaft injuries illustrates the severity of trauma in these patients.

* Section of Orthopedic Surgery, University of Kansas Medical Center, Kansas City, Kansas.

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Treatment

Twenty-nine patients were treated with skeletal traction followed by hip spica or long leg plaster immobilization (the average length of time being seven and one-half weeks). Only one pin traction (through the anterior tibial tubercle) was used rather than the two pin method of the Campbell Clinic.³ This was followed by a vigorous physical therapy program and progressive weight bearing as soon as solid union occurred.

A large percentage (37 per cent) of our patients underwent open reduction and internal fixation by a variety of means.

We chose Rush Pin fixation in nine of the 16 patients undergoing open reduction and internal fixation. There was combination of Rush Pin and Webb Bolt fixation in two patients. The other means of internal fixation used were Webb Bolts, Multiple Steinman Pins, Vesley-Street nail, Kuntscher nail, and primary knee fusion utilizing Kuntscher nail. Other authors have had success with reverse blade plate fixation of the fracture with early knee motion.⁴⁻⁶ Tibial Kuntscher nails may be used with an operative technique similar to that used with Rush Pins.⁷

Complications

One late amputation was necessary as a result of infection in the compounded fracture site. Four infections occurred, three as a result of compound fractures and grossly contaminated wounds. In one patient, one of the Rush Pins backed out the skin wound resulting in an infection in the wound, which healed following drainage. Interestingly enough, occlusion of the major vessels about the knee did not occur in this series. Bergen⁸ and Klingensmith⁹ have reported cases and outlined the diagnosis and etiology of popliteal artery occlusion in association with lower femur fractures.

Indications for Open Reduction and Internal Fixation

Fifty per cent of our patients sustained their supracondylar fractures as a result of high speed automobile accidents. Practically all of these patients had multiple injuries consisting of accompanying extremity fractures, chest, abdominal, or head injuries. These patients present difficult problems in treatment as well as nursing care.

Open reduction and internal fixation was performed in those patients whose general condition would permit surgery, and whose condition may

have worsened by prolonged immobilization, as in the aged. This allowed the extremity to be out of cumbersome traction apparatus or plaster providing for mobilization of the patient and better nursing care. Those patients with supracondylar fractures of the femur without concomitant injuries were operated to provide good stabilization of the fracture and allow early knee motion without weight bearing. We agree with Holt⁴ that "In general the shorter the period of immobilization the better the eventual range of knee motion."

All types of supracondylar fractures were operated including transverse, condylar, Y and T, and comminuted fractures.

Rush Pin Fixation

We have found Rush Pin fixation highly satisfactory in the open treatment of supracondylar fractures of the femur. The technique as described by Rush¹⁰ is simple, with insertion of the pins through the femoral condyles. There is minimal dissection at the site of insertion of the pins and very little dissection surrounding the fracture site is necessary, if at all.

This fixation provides good stabilization of the fracture site for early knee motion, but weight bearing should, of course, be avoided until union of the fracture. Most of these patients were started on active and passive quadriceps and knee exercises within five days of surgery. All of the nine patients treated with Rush Pin fixation united their fractures.

The only infection with Rush Pin fixation was superficial and was secondary to one of the pins backing out. This fracture went on to solid union in 14 weeks.

Results

One fracture failed to unite in a patient treated with a long leg plaster without weight bearing for ten weeks followed by ischial weight bearing caliper which was discarded too early by the patient. This patient has subsequently had fusion of the affected knee and bone grafting of the fracture.

The goal in the treatment of supracondylar fractures of the femur is to obtain solid union of the fracture while preserving useful knee motion. Knee motion in the internally fixed femurs was not significantly better than in those treated by closed reduction and external fixation. This comparison is not completely valid as in general the most severely displaced or comminuted fractures were operated upon. We do feel that if the internally fixed fractures had been treated by closed methods, knee motion would have been more limited.

Case Reports

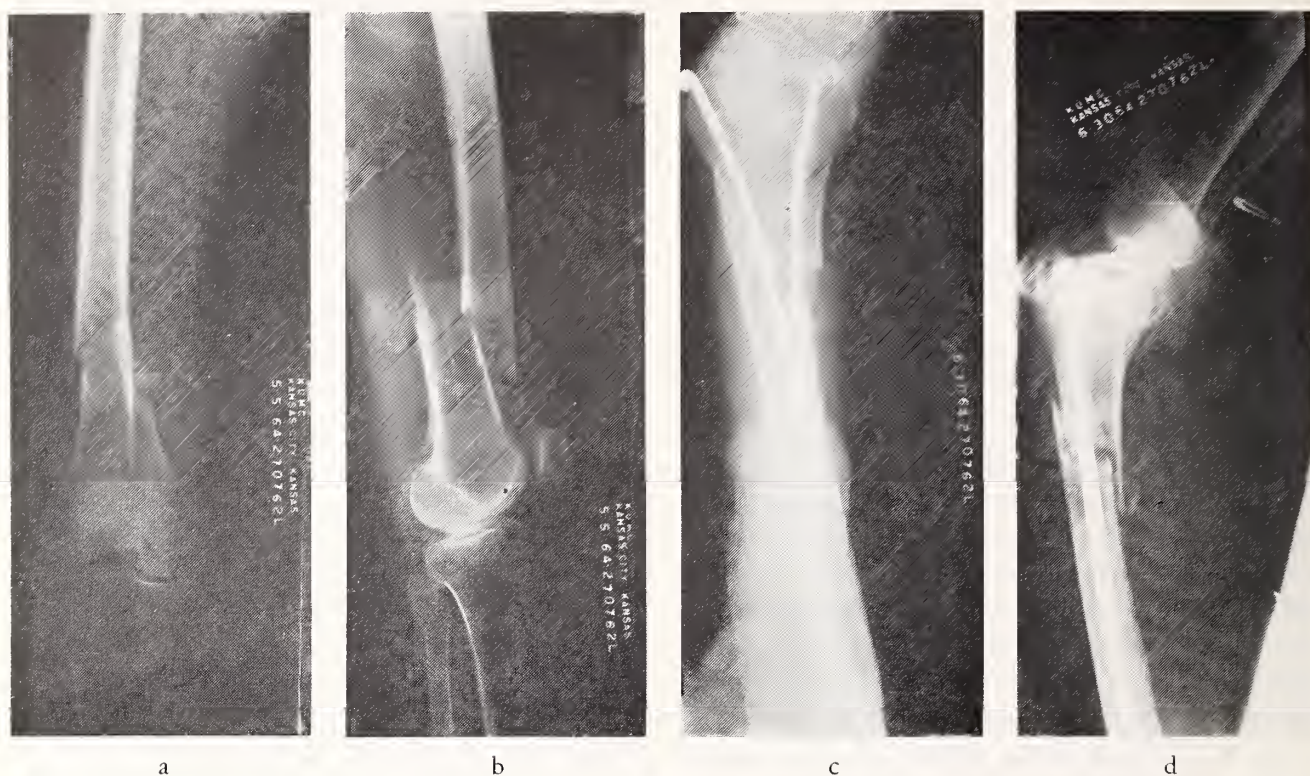


Figure 1. Case No. 1, a 79-year-old woman fell to the floor while working at home, sustaining a transverse fracture of the distal femur. (a) Anterior-posterior pre-operative view; (b) Lateral pre-operative view; (c) Anterior-posterior view of femur six weeks following internal fixation with Rush Pins showing good position; (d) Lateral view of the same fracture six weeks postoperatively.

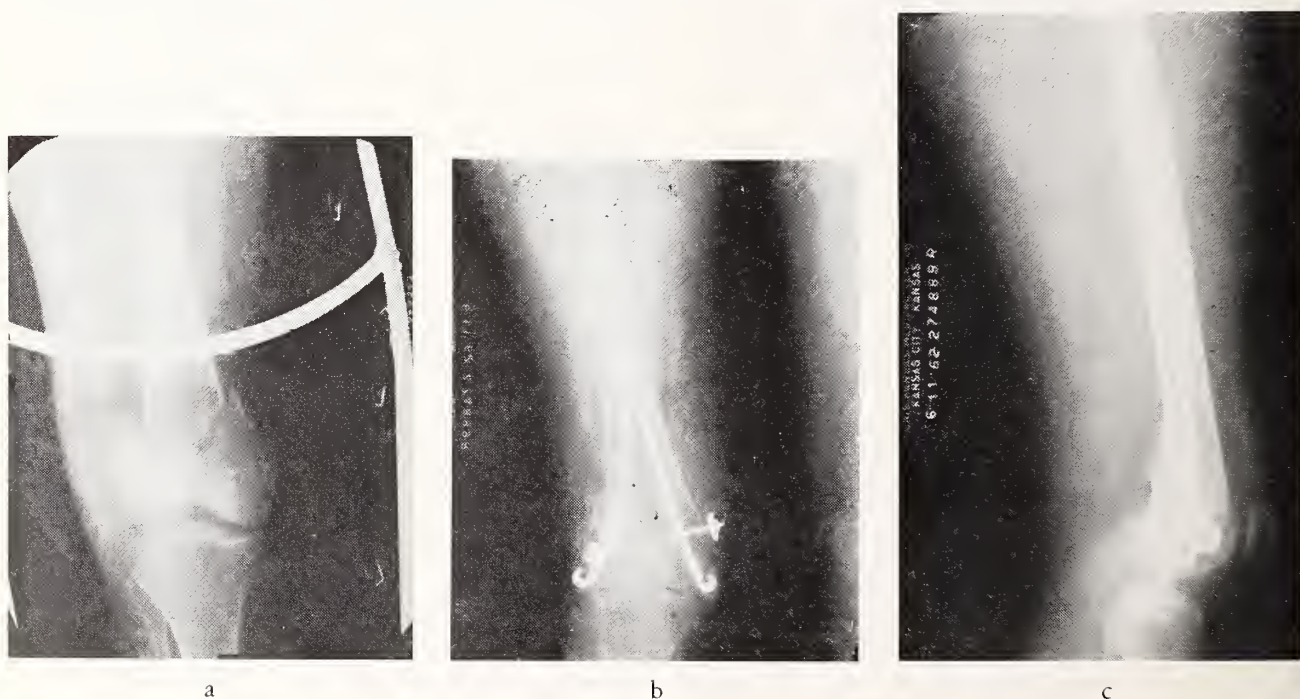
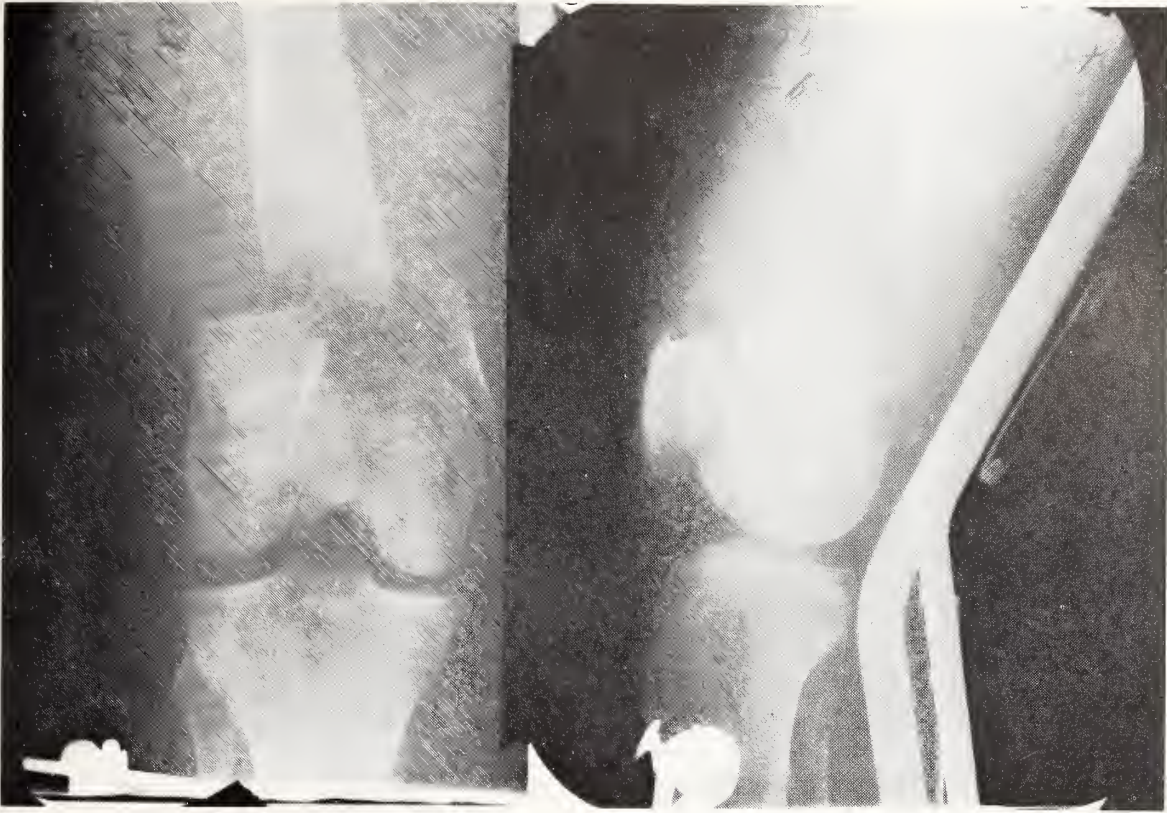


Figure 2. Case No. 2, a 21-year-old woman was injured in the back seat of an automobile involved in a head-on collision. She had no injuries other than a comminuted T-fracture of the femur. This patient was full weight-bearing in three and a half months with a range motion from 180 degrees extension to 100 degrees flexion. (a) Anterior-posterior view of the patient's femur in a Thomas splint; (b) Anterior-posterior view showing Rush Pin fixation with Webb Bolt compression for reduction in the intercondylar plane; (c) Lateral view of the same fixation.



a



b

Figure 3. Case No. 3, a 52-year-old woman was injured in an automobile which was struck by a train, sustaining in addition to this compound comminuted fracture of the femur, fractures of the other three extremities and vertebrae. (a) Anterior and lateral view of the fractured femur initially treated in balanced skeletal traction; (b) Following healing of the compound wounds, Rush Pin fixation was performed resulting in solid union of the fracture. The resultant range of motion was from 180 degrees extension to 120 degrees flexion 11 months after surgery.

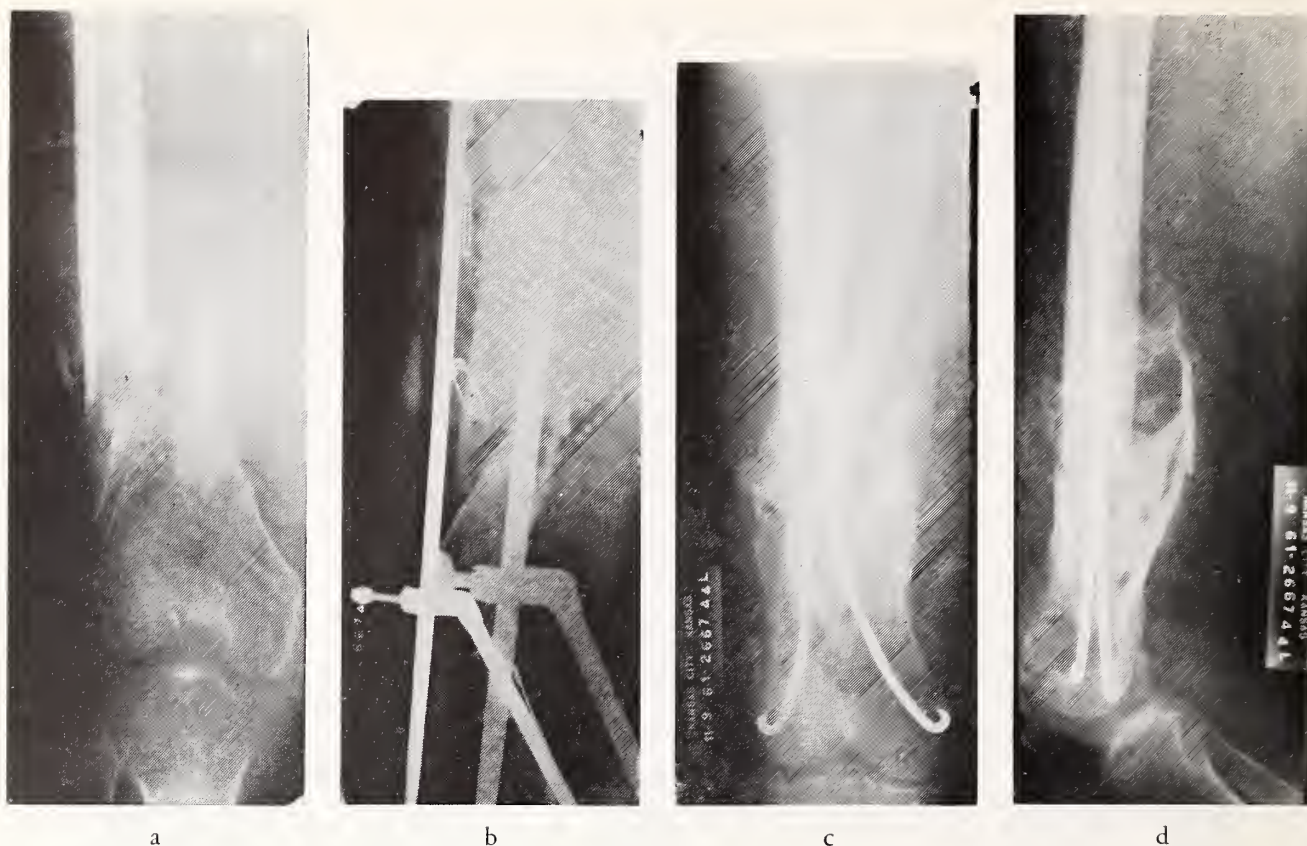


Figure 4. Case No. 4, a 68-year-old man involved in an automobile accident, sustained a compound comminuted fracture of the femur. (a) Anterior view of the initial injury; (b) Lateral view of the fracture in balanced skeletal traction; (c) Anterior view showing solid consolidation with Rush Pin fixation; (d) Lateral view of femur following healing. Range of motion measurements were not included in follow-up visit notes.

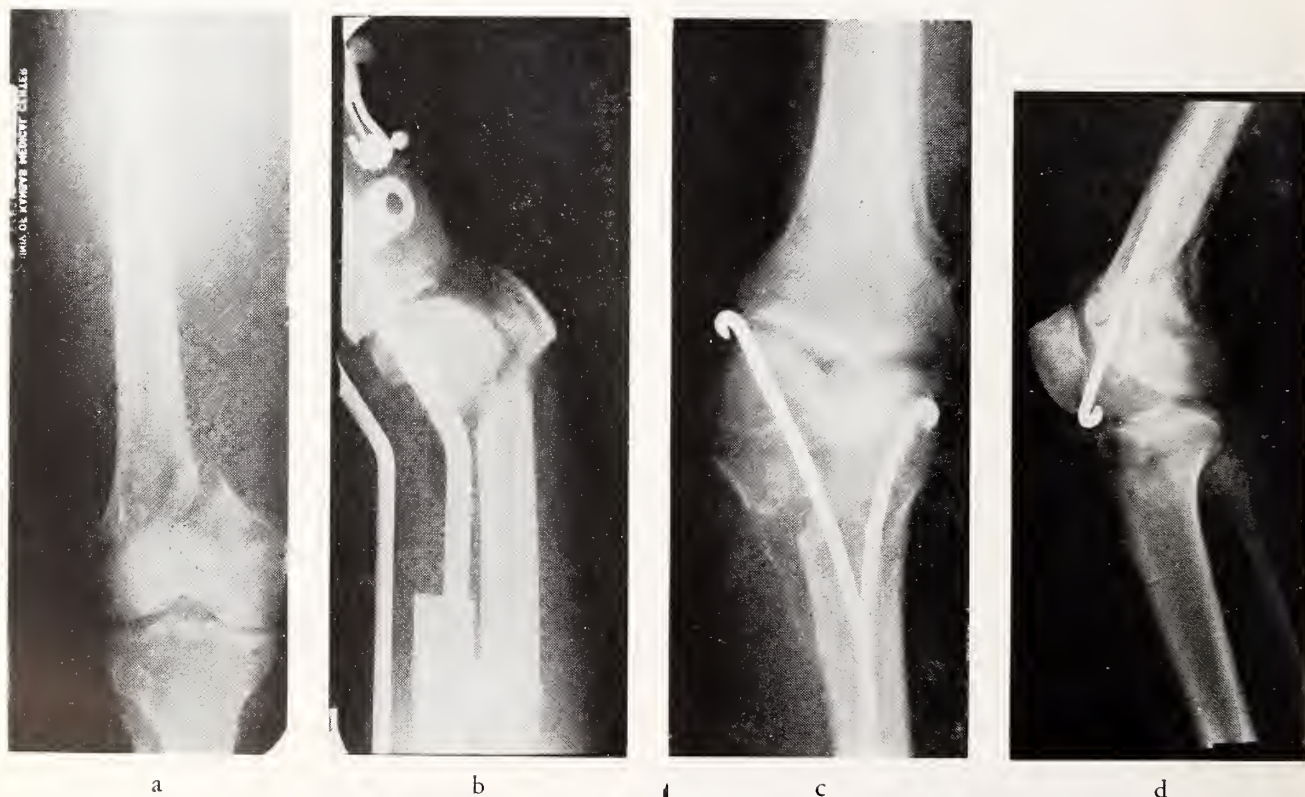


Figure 5. Case No. 5, a 47-year-old farmer had both legs pinned under a tipped tractor, sustaining a compound comminuted supracondylar femoral fracture on the right and a contralateral compound femoral shaft fracture. (a) Anterior view of the supracondylar fracture; (b) Lateral view of the fracture initially treated in balanced skeletal traction following debridement and closure of the wounds; (c) Eight days post-injury Rush pinning was performed with this result four months later. In six months time the patient was full weight bearing on the right with a range of motion from 175 degrees extension to 90 degrees flexion. (d) Lateral view of the internally fixed fracture.

(Continued on Page 339)

Biliary Tract Tumors

Benign Tumors of the Gallbladder

W. G. CAUBLE, M.D., F.A.C.S., *Wichita*

BENIGN TUMORS of the gallbladder are not commonly found in a general surgical practice. Dr. L. V. Ackerman,¹ in his surgical pathology book, stated that benign tumors of the gallbladder are practically nonexistent. They are certainly not this rare according to the literature—especially the surgical journals. Borgerson *et al*² reported 41 cases of polypoid lesions of the gallbladder, none of which were associated with either calculi or cholecystitis.

It has been shown by various authors that the pre-operative radiologic diagnosis of benign tumors of the gallbladder is becoming more frequent. Ochsner and Ochsner³ reported 45 (3 per cent) cases of benign tumors in 1,523 cholecystectomy patients. They did not consider cholesterol polyps and inflammatory polyps as true neoplasms of the gallbladder. The 45 benign tumors were classified into five types: adenoma; papillary adenoma (papillomata); adenomyoma; adenoma with non-invasive carcinoma (carcinoma in situ); and fibroadenoma. Gallstones were present in 47 per cent of their patients and 34 per cent showed chronic cholecystitis. They thought that benign neoplasms produced no specific manifestations but they had several patients where symptoms were relieved after a cholecystectomy. It is thought that pedunculated papillomata may become detached and pass through the cystic duct or obstruct the duct. Detached adenomas may float in the bile. Ochsner and Ochsner recommended cholecystectomy as the treatment of choice. It was thought that malignant tumors may develop from once benign tumors, and certainly benign tumors are removed from the colon and stomach, so it is just as desirable to remove them from the gallbladder. They removed two that proved to be carcinoma in situ.

Adenomyoma is considered the most common benign tumor of the gallbladder and it is usually found in the fundus.⁴ The tumor is benign, but there was one case reported by Eiserth⁵ in which an adenocarcinoma was found arising in an adenomyoma. Fotopoulos and Crampton⁶ wrote that adenomyoma-

A general discussion has been given concerning benign tumors of the gallbladder and it has been pointed out that certain types may develop into carcinoma. A series of five cases have been discussed and their interesting aspects noted. These represent the most common types of benign tumors. It is the opinion of the author that cholecystectomy is the treatment of choice for the condition.

tos is a non-neoplastic and probably degenerative disease of the gallbladder. They thought that possible co-existent neuromatosis and cholesterolosis pro-neuromatosis and cholesterolosis produced a mechanism for production of symptoms of gallbladder disease and cholecystectomy was indicated if it was symptomatic.

Wellbrock⁸ reported that adenomas practically always occur singly, but two cases were noted in which there were more than one tumor. He reviewed 9,550 gallbladders removed surgically at the Mayo Clinic, 69 contained one or more adenomas, 47 of the patients were women and 22 men. Thirty-eight of the tumors occurred in gallbladders containing stones. He thought that they may be a possible source of carcinoma. Malignancy was found in two of his cases *only* on microscopic examination. These were definitely invasive.

Selzer *et al*⁷ reviewed 70 cases of benign intraluminal lesions occurring in noncalculous gallbladders. The most common type in their series was the cholesterol polyp. The adenomatous polyp was the most rare and was thought to be the only type capable of becoming malignant. They thought the so-called papillomas were rarely malignant or premalignant in the absence of gallstones. Eighty-one per cent of their cases were females and the average age was 49.1 years of age, ranging from 21 to 68.

Presented at the annual meeting of the Kansas Chapter, American College of Surgeons, Topeka, October 23, 1966.

Case Reports

1. V.P.—62-year-old, white female gave a long history of gallbladder trouble and an I.V. cholangiogram revealed an occluded cystic duct. The patient was advised to have surgery but refused. Six months later she submitted to surgery and a cholecystectomy was done. The pathology revealed chronic cholecystitis and cholelithiasis with a *benign papilloma* of the gallbladder (Figure 1). She did well following surgery.

2. B.T.—32-year-old, white female had indigestion for several months and x-rays revealed a hypertrophic gastritis and intramural *adenoma* of the gallbladder. She underwent a cholecystectomy and the pathology revealed chronic cholecystitis and an *adenopapilloma* of the gallbladder (Figure 2). She had numerous adhe-

sions around the gallbladder. She did well following surgery.

3. L.H.—67-year-old, white female could not eat fatty and rich foods. X-rays revealed stones. A cholecystectomy was done. Large stones and a *benign polyp* of the gallbladder (Figure 3) was found. She did well following surgery.

4. D.W.—72-year-old, white female complained of indigestion for several years and gave a typical history of gallbladder disease. After x-rays, a cholecystectomy was done and the pathology revealed chronic cholecystitis, cholelithiasis, cholesterolosis, and *adenomyoma* (Figure 4). The pathologist commented that the tumor was a benign smooth muscle tumor with no evidence of malignancy. Her postoperative course was uneventful.

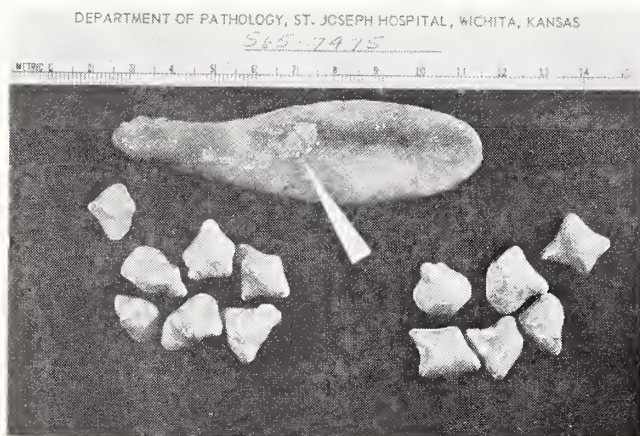


Figure 1. Gallbladder from Case No. 1—Benign papilloma. These may detach and obstruct the cystic duct.

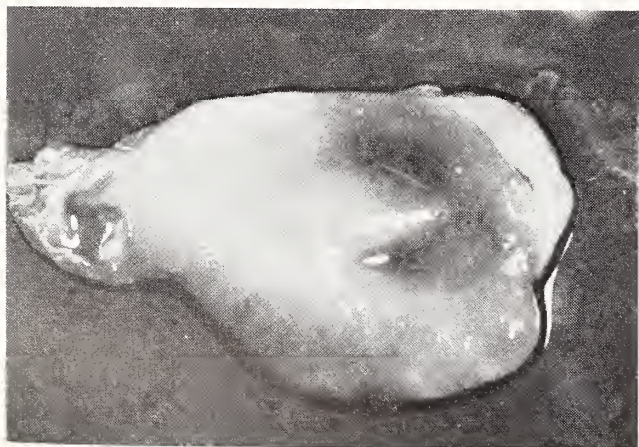


Figure 2. Gallbladder from Case No. 2—This was diagnosed adenopapilloma.



Figure 3. Gallbladder from Case No. 3—Benign polyp.



Figure 4. Gallbladder from Case No. 4—Adenomyoma, smooth muscle tumor.

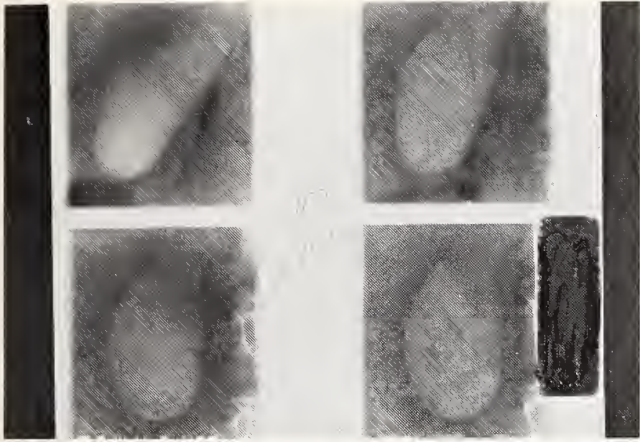


Figure 5. Preoperative x-rays of Case No. 5—Small stones appeared in the gallbladder. Later found to be in the tumor itself.

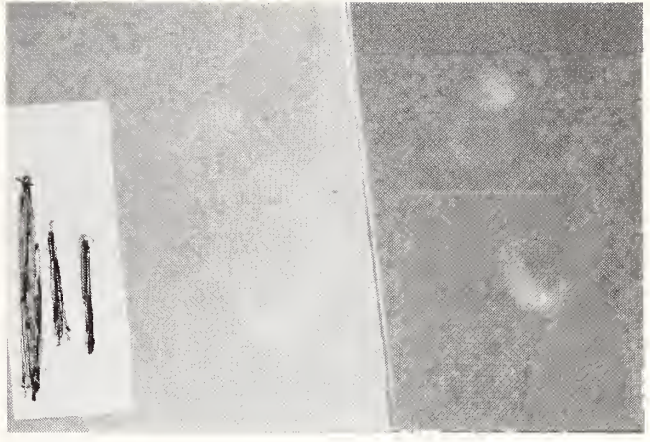


Figure 6. Soft tissue x-ray of the removed gallbladder showing calcified stone in the tumor of Case No. 5.

5. P.W.—56-year-old, white female had attacks of pain in the pit of the stomach. Gallbladder x-rays in 1961 were negative. Symptoms persisted and x-rays taken in May, 1966, revealed a functioning gallbladder with small, partially calcified stones (Figures 5 and 6). A cholecystectomy was done and the pathology revealed chronic cholecystitis and cholelithiasis with adenoma (Figure 7) of the fundus. The stones were intramural. Her postoperative course was uneventful and she has been symptom free.

The average age of this small series of cases is 58 years, ranging from 32 to 72 years. All of these tumors reported are in female patients and all of these patients had symptoms of gallbladder disease and cholecystectomy relieved them of their symptoms. They all did well with their surgery.

To conserve time, I purposely have not gone into the pathology of these benign tumors because this is well covered in other articles and textbooks. The pathology is somewhat confused at the present time and various different classifications were found in several articles. Jones and Walker,⁹ in discussing the correlation of the pathologic and radiographic findings of these tumors, state that intraluminal, non-opaque tumors of the gallbladder deserve accurate histologic classification as the basis for further study of large series. In their article they presented a classification. I gave only one classification which seemed fairly simple to me. Some articles were written by roentgenologists, who brought out certain points of x-ray diagnosis. They did not recommend surgery unless symptoms were present.

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Figure 7. Gallbladder removed from Case No. 5—Adenoma of the fundus is seen. The stones were in the center of the tumor.

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Bladder Carcinoma—

—Natural History and Behavior in Males in Kansas

A. F. JAMES, M.B.B.S., F.R.C.S., F.R.C.S.Ed., RAUL BRITO, M.D., and
M. E. JACOBSON, M.D., F.A.C.S., *Wichita**

Introduction

THE NATURAL HISTORY of bladder carcinoma tends to vary in different parts of the world. In Germany a high incidence of Bladder Carcinoma was noted among workers in the dye stuff industry by Rehn (1895).¹ In Egypt, Ferguson (1911)² noted a high incidence of bladder carcinoma in areas where bilharziasis was endemic. Payne (1953)³ from England, and Mills (1964)⁴ from Scotland reported 92.5 per cent and 63 per cent incidence respectively of transitional cell carcinoma of bladder, whereas Houston (1964)⁵ from Southern Rhodesia noted squamous cell carcinoma in 51 per cent of bladder tumors and transitional cell carcinoma in only 9.4 per cent. The present study is undertaken to evaluate any regional characteristics of bladder carcinoma in the state of Kansas.

Material and Methods

Ninety-one consecutive patients from different parts of the state attended the Veterans Administration Hospital, Wichita, Kansas, from 1944 to 1965 for the treatment of bladder carcinoma and were included in the study. Metastatic carcinoma of the bladder was excluded. Forty-nine patients were followed for five years or more, and survival rates were calculated for these patients.

Results

Age: The bladder carcinoma was noted in all age groups over the age of 30; 58.8 per cent of the patients were between 61 and 70 years of age (*Figure 1*).

Principal symptom: Gross hematuria was noted by 77.5 per cent. The remaining patients presented with dysuria or abdominal pain (*Figure 2*).

Duration of symptoms: 29.7 per cent reported to hospital within a month of onset of symptoms; 22.7 per cent waited a year or more.

Occupation: The occupational pattern closely simulates the pattern for male population of Kansas⁶ with the exception of sedentary workers (*Figure 3*).

Since the natural history of bladder carcinoma varies in different parts of the world, this study was undertaken to evaluate any regional characteristics of bladder carcinoma in Kansas. Presented here are the results of a study of 91 patients who were admitted to the Veterans Administration Hospital in Wichita for treatment.

This is probably because of the fact that only a minority of veterans attending the Veterans Administration Hospital are employed as white collar workers.

Habits: A history of smoking cigarettes was ob-

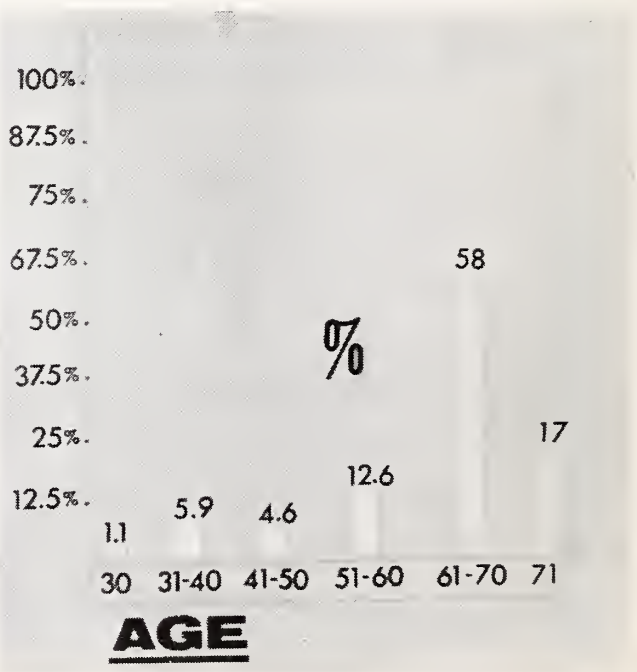


Figure 1

* From the Department of Urology, Veterans Administration Hospital, Wichita, Kansas.

Presented at the annual meeting of the Kansas Chapter, American College of Surgeons, Topeka, October 23, 1966.

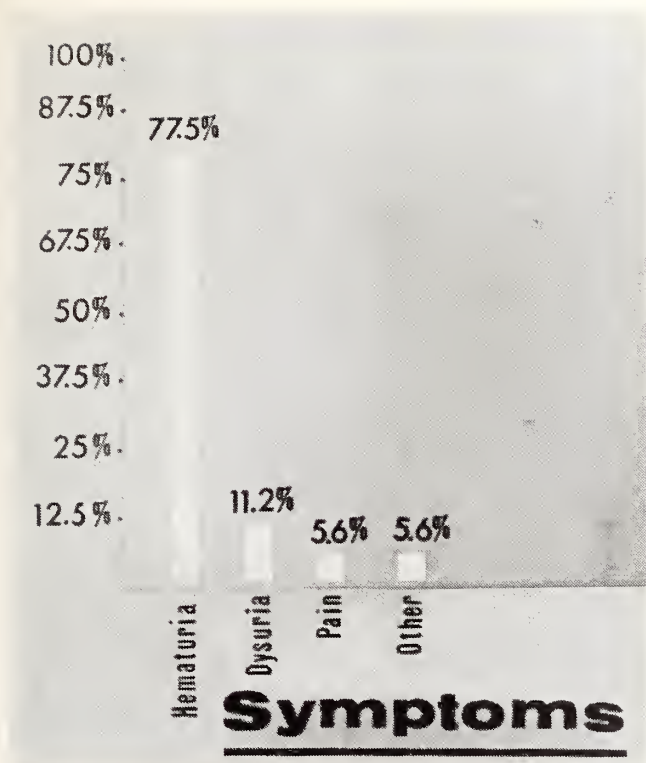


Figure 2

tained in 97 per cent of the patients in the series. Among these, 42.5 per cent smoked over 20 cigarettes a day for several years.

Blood groups: Among patients with bladder carcinoma, the incidence of blood groups O and AB were the same as in the Kansas population⁷ (Figure 4). However, blood group B was noted in 19.7 per cent of patients in this study as compared with 9 per cent in the Kansas population. Blood group A was noted in 28.1 per cent of the patients as compared to 41 per cent among Kansans. It is more accurate statistically to describe that the relative incidence of bladder carcinoma in blood group B is 2.07 as compared to blood group O and the Chi Square Value is 11.34 with three degrees of freedom.

Second primary carcinoma: Nineteen patients, or 20 per cent, presented with a second primary carci-

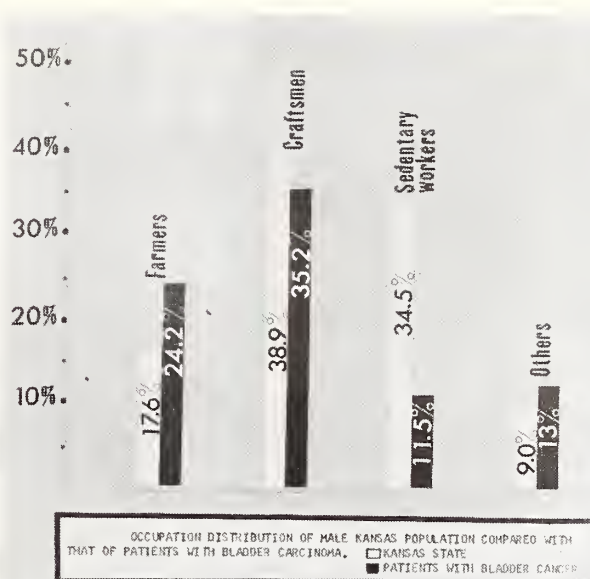


Figure 3

noma. The most common site was prostate, closely followed by the lip (Table 1). Four additional carcinomas were noted but not included in the above 19 cases as they were arising from urothelium.

Pathology: Transitional cell carcinoma was noted in 86.5 per cent. The Broder's classification⁸ was followed, but simplified to include grades I and II in low grade carcinomas, and grades III and IV included in high grade carcinomas. The staging of the bladder carcinoma was according to the classification of Jewett and Strong.⁹ Tumors infiltrating less than halfway through the bladder muscle were grouped into superficial stage, and tumors infiltrating more than half the thickness of the bladder muscle, or with metastases were grouped into deep stage. Jewett¹⁰ and Whitmore¹¹ followed similar simplification when discussing their five year survivals.

Treatment: Resection and fulguration was the most common method of treatment. Partial cystectomy and total cystectomy were performed in selected cases. Radiotherapy was supplemented to the above methods of treatment but not adopted as a definitive method in this study.

TABLE 1
INCIDENCE AND DISTRIBUTION OF OTHER PRIMARY CARCINOMAS IN PATIENTS WITH BLADDER CARCINOMA

Twenty-three (23) patients with bladder carcinoma also had twenty-six (26) primary carcinomas at other sites. Three (3) patients had two (2) primary carcinomas each, at other sites

Carcinoma in G.U. Tract—11

ADENO CA OF PROSTATE CARCINOMA OF URETER CARCINOMA OF KIDNEY

7

2

2

Carcinoma Outside G.U. Tract—15

LIP STOMACH COLON SKIN MANDIBLE LEUKEMIA LUNG

6

2

2

2

1

1

1

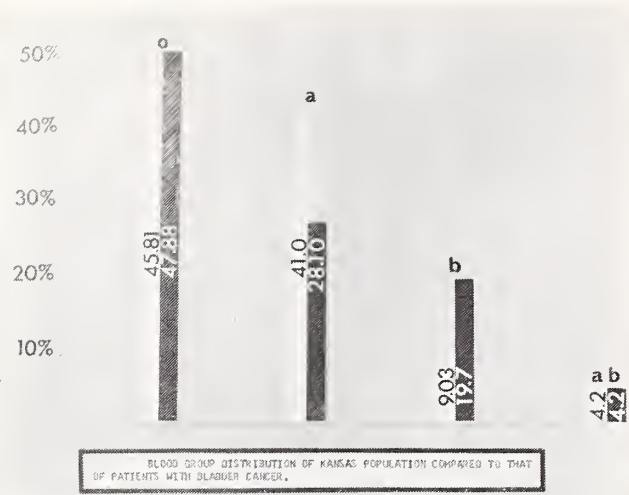


Figure 4

Survivals: Forty-nine patients were followed up for five years or more, and their survival rates were calculated in relation to the method of treatment (Table 2). The results are uniformly good whatever method of treatment was adopted. These cases were further analyzed according to the grade and stage

TABLE 2			
5 YEAR SURVIVAL ACCORDING TO TREATMENT			
Method of Treatment	Number of Cases	5 Year Survival	
		NUMBER	PER CENT
Total Cystectomy	6	5	83
Partial Cystectomy with or without radiotherapy	11	7	63.5
Resection and fulguration with or without radiotherapy	22	17	77
Palliative therapy	10	0	0

of carcinoma (Table 3). As expected, 80 per cent of patients with low grade, superficial stage survived for five years or more. Thirty-three per cent of patients with high grade, deep stage cancer survived for five years or more. Manzon and Samellas¹² analyzed their cases similarly and their figures are quoted for comparison (Table 3).

Discussion

The age distribution and symptomatology noted in the present series does not vary from published reports.¹²⁻¹⁴ Our series reveal that 97 per cent of the patients with bladder carcinoma were smokers. Separately published data¹⁵ point out that 91 per cent of patients with bladder cancer smoke, as compared with 76 per cent smokers in the general population. Kerr¹⁶ noted that smoking tends to increase the urinary excretion of metabolic products of tryptophane by 50 per cent. Two of these products, 3-hydroxykynurenine and 3-hydroxyanthranilic acid contain ortho-aminophenol (Figure 5). It has already been shown that ortho-aminophenol is the key carcinogen present in the metabolites of known chemicals which are industrial causes of bladder carcinoma. It is therefore highly probable that the ortho-aminophenol derived from tryptophane metabolism acts as an endogenous carcinogen on the bladder.

We have also studied the blood group pattern among the bladder carcinoma patients. A positive relation between disease and blood group was noted by Aird, *et al.*,¹⁶ in 1953. They found that the relative incidence of cancer of stomach was 1.5 in persons of blood group A as compared to blood group O. We have found that the relative incidence of bladder carcinoma was 2.07 in blood group B as compared to blood group O. Large surveys are necessary to confirm these findings.

It is now known that patients with bladder carcinoma run a high risk of developing a second primary carcinoma. Ward-McQuaid¹⁷ noted a 10 per

TABLE 3				
5 YEAR SURVIVAL IN TRANSITIONAL CELL CARCINOMAS EXHIBITING DIFFERENT COMBINATIONS OF STAGE AND GRADE				
Transitional cell carcinoma with following combination	Number	5 Year Survival		5 Year Survival
		NUMBER	PER CENT	MANZON SERIES PER CENT
Low grade and superficial stage	21	17	80	75
High grade and deep stage	15	5	33	2
Low grade and deep stage	6	4	66	46
High grade and superficial stage	3	2	66	40

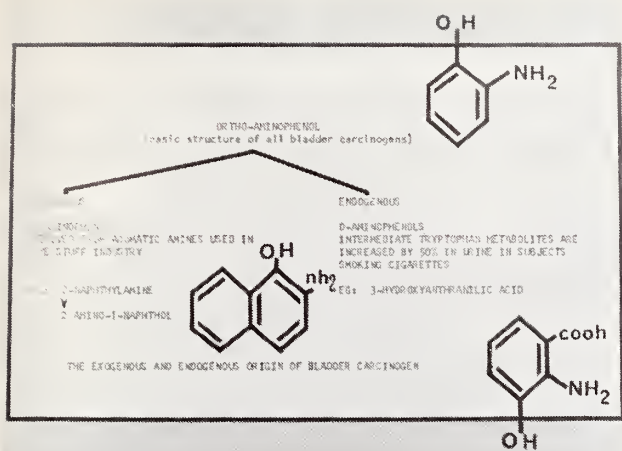


Figure 5

cent incidence in his series. It is important to exclude tumors arising from urothelium as they would probably represent metastasis.

In our series, 20 per cent of the patients developed a second primary carcinoma. All of these tumors were confirmed by histological examination. Most of these patients were found to be in the 61 to 70 years age group; it is probable that in the seventh decade, the patient runs a high risk of developing malignancy.

Conclusions

1. Substantial number of patients wait a year or more after the onset of symptoms before seeking medical advice.

2. 97 per cent of the patients with bladder carcinoma were cigarette smokers. This is probably an etiological factor in the development of bladder carcinoma.

3. A high incidence of bladder tumor was noted in blood group B.

4. At least one in five patients with bladder carcinoma will develop a second primary carcinoma.

5. Twenty per cent of cases were too advanced to be treated effectively.

Acknowledgement

It is a pleasure to acknowledge the assistance given by Mr. C. S. Eason of the Southern Research Support Center, Veterans Administration, Little Rock, Arkansas, in analyzing the material.

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Supracondylar Fractures

(Continued from Page 332)

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Tumor Tissue Growth

The Growth of Tumor Tissues From the Central Nervous System in Tissue Culture

JACK R. COOPER, M.D., M.Sc., F.A.C.S., *Shawnee Mission*

NEAR THE CLOSE of the 19th century biologists observed that explants of embryonic tissue and blood cells seemed to survive in an artificial environment. Until the turn of the century, they regarded this phenomenon as the prolongation of death rather than the maintenance of life. Then, investigators culturing an explant of a neural crest observed the development of mature axons. For 34 years, Alexis Carrel successfully applied meticulous aseptic surgical techniques to the art of continuous tissue culture. Coincident with public acclaim, tissue culture methods matured rapidly after World War II. The cell could now be studied as an isolated unit or as the dynamic constituent of a structured environment such as an organ rudiment or a cellular aggregate. Fertilization, mitosis and cell structure could be observed, influenced, studied and photographed as a continuum of dynamic living events.^{1, 2}

Viruses propagate only in the intact cell where they may exhibit tissue preferences or produce characteristic cytopathic changes. A confluent monolayer of cells cultured as an adherent sheet on a glass surface such as the side of a test tube or bottle rapidly became a widely accepted method for the controlled cultivation of viruses and the assay of their concentration or infectivity. In the TCID₅₀ (tissue-culture-infective-dose-50) method, liquid aliquots from serial logarithmic dilutions (1:10) of a sample are inoculated into test tube tissue cultures in which groups of four or more test tubes represent each of the serial dilutions. The negative logarithm of the dilution in which half (50 per cent) of the tubes exhibit cytopathic changes is a measure of the infectivity of the sample. In the *plaque* assay method, a properly diluted aliquot of the sample is distributed evenly over a tissue culture prepared as a confluent monolayer in a Petri dish or medicine bottle. When sufficient time has elapsed for the virus particles to become attached to the cells, the culture is covered with a thin layer of agar. The solidified agar confines the propagating infectious virus particles to discrete solitary points that eventually appear as macroscopic

colonies of altered cells. A vital stain, such as neutral red, will render the colonies more discrete and discernible. A colony count is an accurate appraisal of the number of infectious virus particles in the aliquot. Differences in cytopathic manifestations or growth rate sometimes indicate that a mixture of viruses is present in the aliquot. Comparable to the use of agar plates in bacteriology, colony samples

A variety of brain tumors grown and studied in tissue cultures exhibited growth patterns comparable to normal tissues. A type 3 adenovirus was isolated from a pituitary chromophobe adenoma. The relationship of this virus to the tumor has not yet been determined.

will yield pure cultures and permit the separation of virus mixtures.³

An important modern innovation is the chemically derived culture medium. This medium is synthesized from essential amino acids, vitamins and minerals in the necessary proportions. Media derived from biological sources such as ascitic fluid or serum contain many unknown contaminants in the form of toxins, antibodies, hormones or latent viruses, which can be more definitely eliminated from a prepared synthetic medium. Neutralizing antibodies will reduce the number of infectious viral particles in a sample or eliminate them altogether. On the other hand, growth factors which are only available from biological sources, may be an essential additive to a culture.

Contemporary discoveries, developments, and innovations in optics, physics, biochemistry and biometrics—to mention only a few—have enhanced immensely both the method and application of tissue cultures. Chambers have been developed to meet the optical and physical requirements for excellent microscopic observation at the highest magnification. With phase contrast microscopy the internal structure of the cell is seen with the detail normally accorded

Presented at the annual meeting of the Kansas Chapter, American College of Surgeons, Topeka, October 23, 1966.

to stains. The interference microscope will provide the same degree of contrast and also measure the concentration of macromolecular material in the cell or any of its constituent parts. With the micromanipulator (*Figure 1*) under microscopic control, the biologist may dissect a cell, insert microelectrodes, or

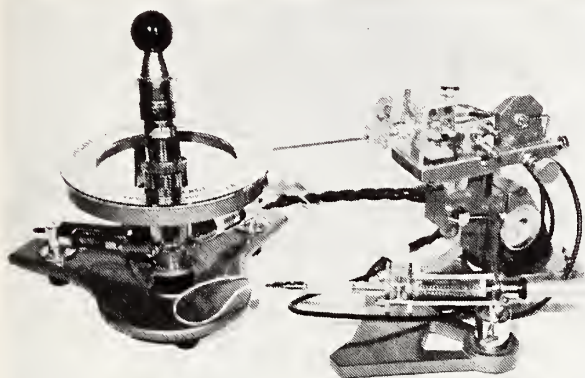


Figure 1

pick up individual cells in a micropipette. With time-lapse cinemicrophotography (*Figure 2*), the culture may be photographed in slow motion. A dynamic dimension is imparted to cellular behavior as hours of continuous photographic effort are translated into condensed moments of continuous visible cellular activity. The membranous borders of the cell undulate, boil or thrash in pinocytic activity. The cytoplasm engulfs and digests particulate material from the media. The cell changes shape or moves in an ameboid manner across the slide. The nucleus may rotate or form chromatin strands, chromosomes, and ultimately divide. And, as death strikes, the dynamic dimension in the cell is reduced to a familiar quietude—the struggle is gone.⁴

Methods

With one exception, the neurological material presented in this study came from the neurosurgical practice of the author, and tissues from other organ systems were obtained from varied sources. Personal procurement contributed to the control and expediency of tissue processing. The exception was the chemically induced (methylcholanthrene) dural carcinoma in a mouse brain. Saline was often of necessity the collection medium, although Hanks' balanced salt solution (Hanks' B.S.S.) was the preferred collection medium since it contains essential mineral ions, a buffer system, and a more dependable pH. Phenol red (0.002 per cent) was often added to Hanks' B.S.S. as well as the culture media to monitor the pH. When processing might be delayed, the sample was occasionally refrigerated.

For the preparation of a cell dispersion, the tissue was washed in Hanks' B.S.S. to remove blood, cut into tiny pieces, and then digested with an enzyme in solution. The preferred enzyme was trypsin (0.25 per cent) in Hanks' B.S.S. After the fragments had settled by gravity, decantation removed the cell dispersion. Centrifugation of the cell dispersion at 600 rpm for eight minutes followed by decantation separated the cells from the enzyme solution. To increase the yield of individual cells and cell clusters, tissues resistant to digestion were frequently redigested several times and sometimes redigested after they were incubated in the culture medium for several days. This practice often produced a significant increase in the yield. Ordinarily the yield was resuspended in culture medium without washing and transferred to suitable airtight incubation chambers (Hela bottles, Roux bottles, medicine bottles, test tubes, Leighton tubes or Rose chambers). The culture medium most frequently used was the chemically defined medium 199 with these additives, inactivated calf serum (5 to 20 per cent) and phenol red. Eagle's medium was occasionally used alone or interchangeably with medium 199. A substitute often used for phenol red was water soluble Bromthymol blue (0.004 per cent) which is green at a neutral pH. The microscope is

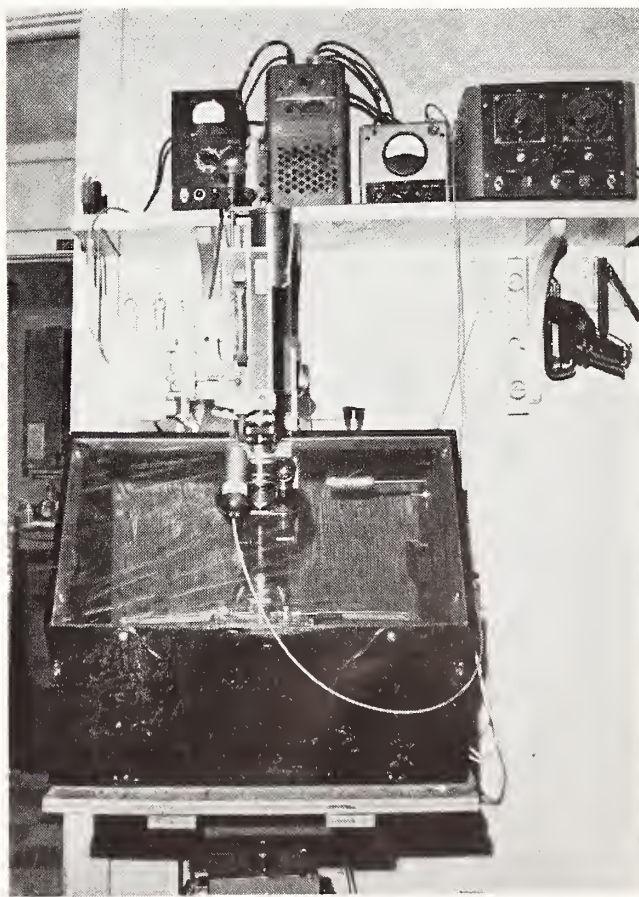


Figure 2

designed to focus critically in green light at the point in the visual spectrum where the human eye is most sensitive. For this reason a green filter is used for critical microscopy, and a green pH monitor is advantageous for critical observation and the conservation of light.⁵

Tissue growth ultimately produces a sheet of cells that adheres to the bottom of the chamber and ultimately forms a confluent monolayer of cells. The confluent monolayer must be reprocessed to avoid a slough of the cell sheet, strangulation from overgrowth, and tissue death. Trypsinization releases the cells from the surface of the chamber and repeated pipetting breaks them further into individual units for resuspension in culture media, reallocation to culture chambers, or storage at subfreezing temperatures (-70°C). A method referred to as dry trypsinization is preferentially used in this laboratory. Upon removal of the culture media, the chamber is washed with a small aliquot of trypsin to dilute or remove the residual media. A second aliquot of trypsin is added and removed. The residual trypsin is sufficient to decimate the cell sheet but insufficient to significantly contaminate subsequent diluent media. This method avoids the time-consuming steps involving washing, centrifugation, and decanting.

Results

Twenty-four different tissue samples were cultured (*Table 1*). Five of these were from a primary tissue or organ. Four were metastatic tumors. Two were extradural metastases to the spinal cord, and two were metastases to other areas of the body. In two instances the origin of the metastasis was known. Fifteen were primary tumors, and 11 of these arose within the cranial vault. One of the intracerebral tumors was a sarcoma from a mouse that had been inoculated intracerebrally with the carcinogen, 3-methyl-cholanthrene. The other samples were of human origin.

Four tissue samples failed to grow. The disc tissue and muscle were obtained simultaneously from the same patient. The kidney was obtained from an autopsy under unsterile circumstances. Contaminated tissues were normally treated with antibiotics for a short period as the tissue was being processed. The antibiotic was four times the concentration that was generally considered to be nontoxic. The Wilms' tumor was chemically contaminated. Muscle and kidney tissues of both human and animal origin have been grown with ease in other laboratories. The failures, therefore, must be attributed to errors in collection and processing rather than to tissues that are normally difficult to cultivate.

Discussion

The tumors ostensibly of astrocytic origin were arranged in *Table 1* to emphasize their biological similarities and differences. The glioblastoma, if it may be regarded to be of astrocytic origin, is seldom if ever cured or arrested. Astrocytomas in the cerebral hemispheres grow so slowly on occasions that a surgical resection will significantly prolong useful life, although they sometimes become malignant. The astrocytoma in the cerebellum, on the other hand, develops primarily in children where it often projects as a solitary nodule into the cavity of a large cyst facilitating total surgical removal. They are notoriously benign and a cure or protracted survival may occur with surgical removal. Tuberous sclerosis is regarded by many to be a basic heredito-familial disorder in which the face, brain and other organ systems exhibit nodules that resemble tumors in many respects. Adenoma sebaceum (a disorder of the face), epilepsy, and mental deficiency are recognized as clinical manifestations of the disorder. A nodule that produces hydrocephalus and resembles an astrocytoma occurs in the cerebral ventricles in this disease. The patient included in this report was a mentally normal child in whom the adenoma sebaceum was present but poorly developed. However, the pathologist tendered a correct diagnosis based upon the histological features alone.

This study of tumors did not provide a tangible clue to the biological differences they exhibit in the human body. However, the tumors of the central nervous system grew as easily as other tissues in tissue culture.

An adenovirus was isolated from one of the pituitary tumors. The clinical nature of the virus and the failure of the virus to appear elsewhere in the laboratory certainly suggested this virus came from the tumor. Nevertheless, it could not be reisolated from subcultures of the same tumor. Preliminary studies indicate it is a type 3 adenovirus.

Oncogenic properties are attributed today to many viruses, including the type 3 adenovirus. The evidence of this at present is quite convincing although it applies primarily to plants and animals. These submicroscopic organisms replicate only in the substance of a cell, where they may destroy the cell or enter into a latent symbiotic relationship with the cell. But more attractive, the replicative substance of the virus (nucleic acid) is small enough to be invisibly incorporated into the genetic structure of the cell, perhaps as a gene; again, it may only alter the genetic structure without incorporation.⁶ Ependymomas have been induced to grow in the brains of suckling hamsters by inoculating the cerebrum with large amounts of SV₄₀ (Simian virus number 40)

TABLE 1
CLASSIFICATION OF CULTURED TISSUES AND PERIOD OF THE CULTURE

Primary Organ Tissues			METASTATIC CNS		Tumors			
					CNS	PRIMARY	Other	
Normal ovary	1 mo.		Extradural metastasis due to unidentified carcinoma	5 mos.	Cerebral astrocytoma	6 mos.	Wilms' tumor of kidney	N.G.
Myelo-meningocele	4 mos.				Cerebral glioblastoma	14 mos.	Osteogenic sarcoma	6 mos.
Normal kidney	N.G.		Extradural metastasis due to carcinoma of larynx	9 mos.	Cerebral glioblastoma	9 mos.	Carcinoma of nasopharynx	3 mos.
Normal muscle	N.G.				Cerebral glioblastoma	9 mos.	Lipoma	3 mos.
Herniated disc	N.G.				Cystic cerebellar astrocytoma	11 mos.		
			Other		Intraventricular astrocytoma in tuberos sclerosis	15 mos.		
			Ovarian carcinoma	17 mos.				
			Unidentified carcinoma metastasizing to omentum	12 mos.	Pituitary chromophobe adenoma	33 mos.		
					Pituitary chromophobe adenoma	5 mos.		
					Ependymo-blastoma of cauda equina	11 mos.		
					Neurofibroma of S1 nerve root	5 mos.		
					Dural sarcoma in a mouse inoculated with methylcholanthrene	6 mos.		
5			4		11		4	
TOTAL 24								

too large to be encountered under biological circumstances. But, the simian viruses, as the name implies, displays a predilection for monkeys and, with the exception of the reoviruses, have not been isolated from man.⁷

Acknowledgement

To Dr. Herbert Wenner, Research Professor of Pediatrics and head of Virus Research at K.U.M.C., and his staff, I owe a debt of gratitude for the support, assistance, encouragement and instruction that made this study possible.

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Cardiac Arrest

The Use of Drugs in Resuscitation: An Experimental Study

ALFRED HEILBRUNN, M.D., F.A.C.S., and
JACK M. ZIMMERMAN, M.D., F.A.C.S., *Kansas City, Missouri**

SINCE 1960, artificial ventilation and closed chest cardiac massage have become well established as methods of resuscitation from cardiac arrest.^{4, 10, 11, 13, 20} However, considerable uncertainty remains in the choice of adjunctive drug therapy. Epinephrine, calcium salts, digitalis, steroids, quinidine, procaine amide, sodium bicarbonate and other agents have been variously recommended.^{2, 5-8, 17, 18} Epinephrine has been generally recommended in spite of the risk of ventricular fibrillation.^{12, 13, 21} Most of the recommendations regarding drug usage have been based on their usual pharmacologic action or on clinical impression. Little experimental work has been done to document the action of drugs in a standardized cardiac arrest preparation. The papers of Pearson and Redding¹⁴⁻¹⁶ are a notable exception. They evaluated a number of drugs and found epinephrine to be of considerable value in resuscitation—both from asystole and ventricular fibrillation. In an attempt to further clarify the use of adjunctive drugs, the following study was initiated.

Methods

During pilot experiments a standard preparation for the study of anoxic cardiac arrest in dogs was developed. This was basically the same technique as used by Pearson and Redding in some of their studies.¹⁵ Animals were anesthetized with pentobarbital (25 mg. per Kg.) and a cuffed endotracheal tube inserted. The femoral artery and vein were cannulated. The arterial cannula was connected to a Statham strain gauge transducer and an Electronics for Medicine apparatus for the measurement of continuous blood pressure. The electrocardiogram was continuously monitored. Baseline recordings were obtained. The endotracheal tube was then clamped at the end of expiration. The point at which blood pressure fluctuations, as monitored through the trans-

ducer, could no longer be seen was noted. Five minutes later, positive pressure breathing (IPPB) with room air using a Harvard apparatus ventilator was started. Immediately thereafter, external cardiac massage (ECM) at about 80 per minute was initiated. Ventilation and cardiac massage were continued until a spontaneous blood pressure was maintained, or for 30 minutes.

The effects of intracardiac epinephrine, intravenous epinephrine, and intravenous sodium bicarbonate in the treatment of anoxic cardiac arrest, were evaluated in animals. The use of sodium bicarbonate followed by intravenous epinephrine led to increased massage pressures and rapid resuscitation without ventricular fibrillation. In the clinical situation after artificial ventilation and external massage are established, it is suggested that sodium bicarbonate be used primarily and followed by small doses of intravenous epinephrine.

The experimental groups were set up as follows:

Group I—In this group of 20 animals the effects of 1 mgm. of epinephrine (1 ml. of a 1:1000 solution) or 1 ml. of normal saline injected into the ventricles were compared. The test solutions were placed into syringes which were numbered serially. The investigators were unaware of the content of the syringes and the entire group of 20 animals were tested before the code was broken.

Group II—This group of 20 animals was similar to Group I except that 2 ml. of calcium chloride solution was compared to 2 ml. of saline, again in a double blind manner.

Group III—Group III consisted of 20 animals and was identical to Group I.

Group IV—In this small group, two animals were studied with pH and oxygen saturation determinations without the use of any adjunctive agent. In a

* From the Department of Surgery, Veterans Administration Hospital, Kansas City, Missouri, and the University of Kansas School of Medicine, Kansas City, Kansas. Dr. Heilbrunn is Assistant Professor of Surgery. Dr. Zimmerman is presently Associate Professor of Surgery, Church Home and Hospital, Baltimore, Maryland.

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third animal the same determinations were made, but 44.5 meq. of sodium bicarbonate (50 ml.) was given intravenously at the beginning of resuscitation. Samples were taken from the femoral arterial cannula.

Group V—In this group of five animals epinephrine was given in multiple doses of 0.5 mgm. intravenously at five minute intervals after resuscitation had been initiated.

Group VI—In these five animals 44.5 meq. of sodium bicarbonate (50 ml.) was given intravenously and followed by 0.5 mgm. of epinephrine.

Results

The course of all animals was similar up to the point where resuscitation was begun. After the endotracheal tube was clamped, respiratory efforts became quite violent, but within two to three minutes apnea occurred. During this time the cardiovascular response consisted of a gradual slowing of the pulse and in some animals an initial increase in peak systolic pressure. This was soon followed by a return of the pulse to the previous rate and a gradual decline in blood pressure. As blood pressure fell to very low levels it was noted that many EKG com-

plexes did not result in a demonstrable blood pressure fluctuation. The point of no visible blood pressure fluctuation occurred at an average of nine minutes following the clamping of the endotracheal tube. The events are graphically demonstrated in *Figure 1*. During the five-minute waiting period prior to resuscitation, EKG complexes continued to be seen although P waves were absent and the rate was much slower than during the initial control period.

Survivors were defined as those animals able to sustain a blood pressure of at least 30 mm. Hg. mean pressure without ECM prior to the end of the 30 minute resuscitation period. Failures were those animals who still required ECM at 30 minutes.

The results of Group I are shown in *Table 1*. Epinephrine survivors required an average of four minutes of ECM and then produced blood pressures higher than during the initial baseline period. These returned to baseline over the next several minutes. In contrast, saline survivors required an average of 16.3 minutes of ECM and then produced a low blood pressure (*Figure 2*). In the epinephrine failures, after varying but short periods of massage, a high spontaneous blood pressure appeared to be present but within three to four beats ventricular

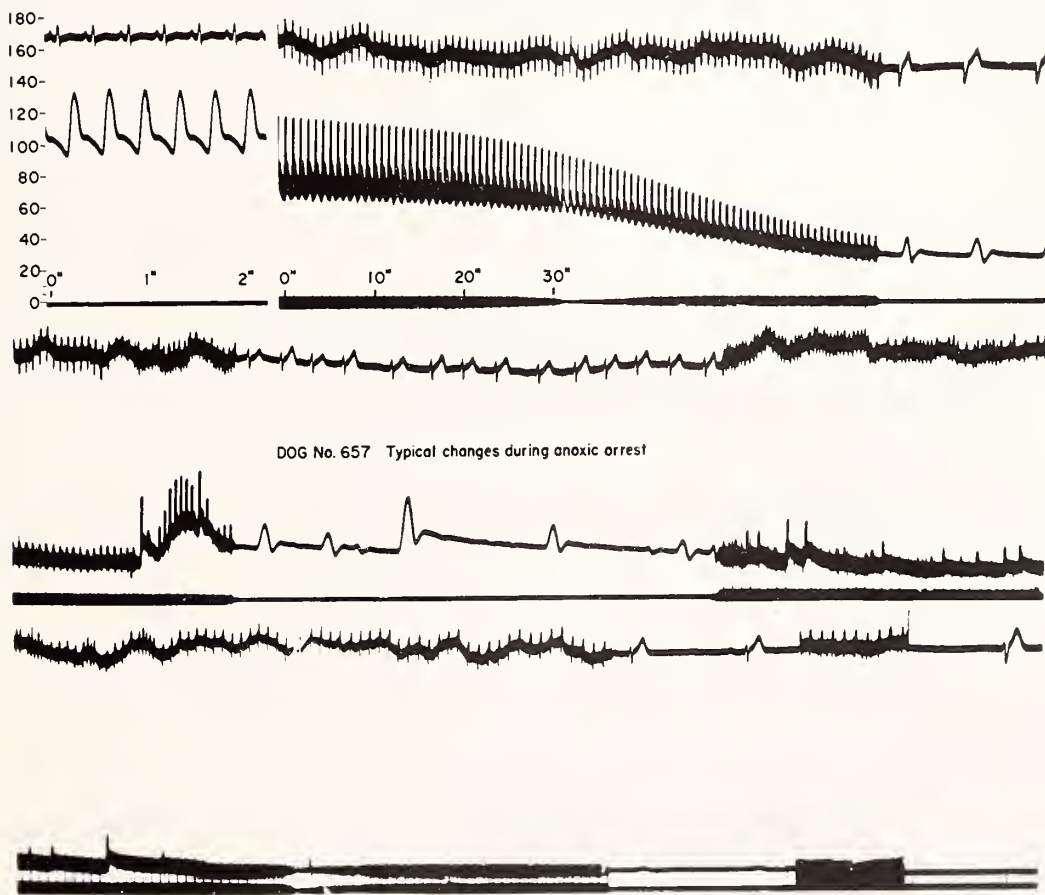


Figure 1. Typical electrocardiographic and blood pressure changes seen during production of anoxic arrest. Endotracheal tube was clamped at the beginning of tracing.

TABLE 1
GROUP I

	Epinephrine	Saline
Survivors	4	3
Failures	6	7
V.F.	6	1
Defibrillated	5	0
Ave. massage time of survivors	4 min.	16.3 min.

fibrillation (V.F.) ensued (Figure 3). Although five of these six were eventually defibrillated none could maintain a spontaneous blood pressure during the remainder of the 30 minute resuscitation attempt.

It was noted in both the epinephrine and saline treated animals that as external cardiac massage progressed beyond the first ten minutes there was an increasing incidence of multiple rib fractures. Seven of the 13 failures were demonstrated to have a massive hemoperitoneum secondary to lacerated livers.

In one of the failures difficulty with the ventilator was encountered and the cause for failure in the others was not apparent. Because of the extensive cerebral damage produced, survivors were sacrificed in 24 hours.

In Group II there was no apparent difference between the saline and calcium chloride treated animals and the results are tabulated in Table 2.

In Group III, seven of the ten epinephrine treated animals were able to sustain a spontaneous blood pressure in contrast to four of the saline treated (Table 3). However, four of the epinephrine animals developed ventricular fibrillation and only one of these was successfully defibrillated. As in Group I, surviving epinephrine treated animals required shorter periods of ECM.

The results from Group IV are graphically demonstrated in Figure 4. Acidosis with pH below 7.2 was demonstrated in each animal prior to resuscitation. Although the pH improved in the two untreated animals it was rapidly returned to normal levels by the use of sodium bicarbonate in the third animal. Oxygen saturation rapidly dropped to 20 per cent

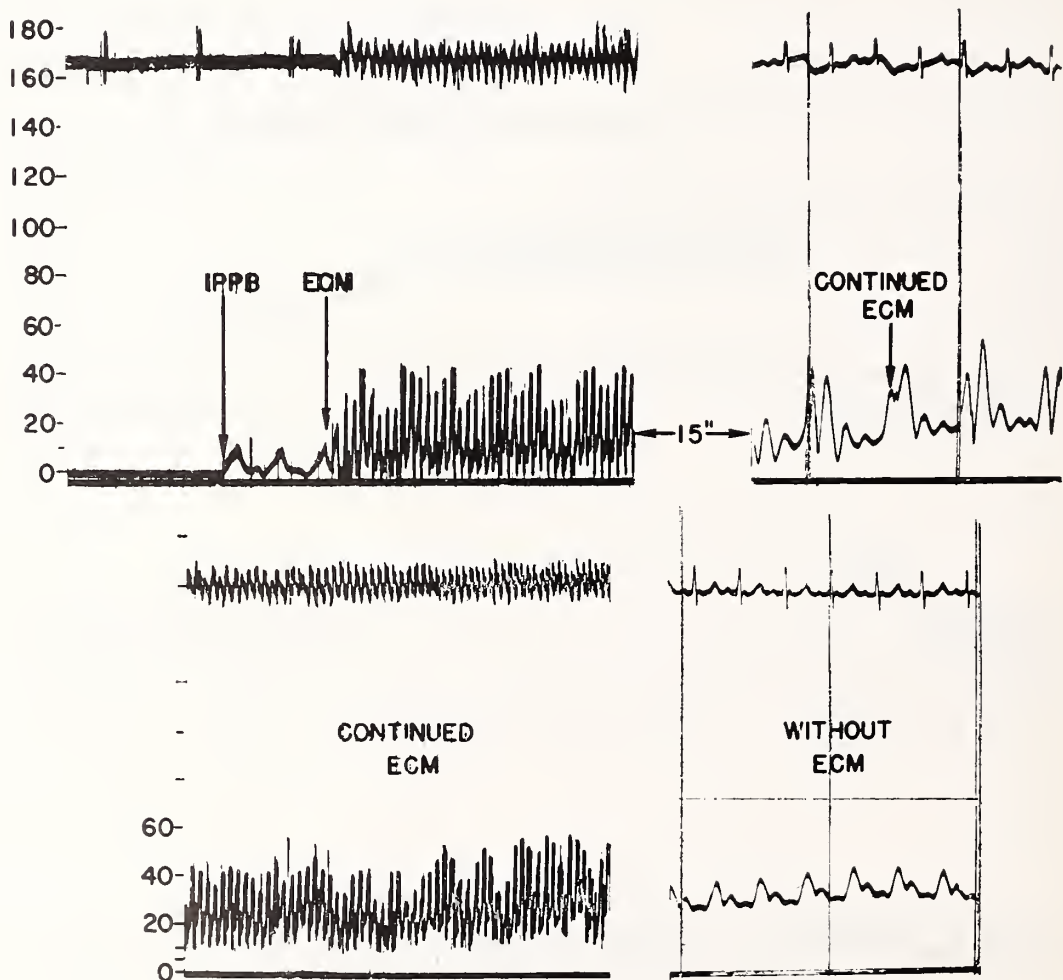


Figure 2. Typical tracings obtained during resuscitation of a saline treated animal.

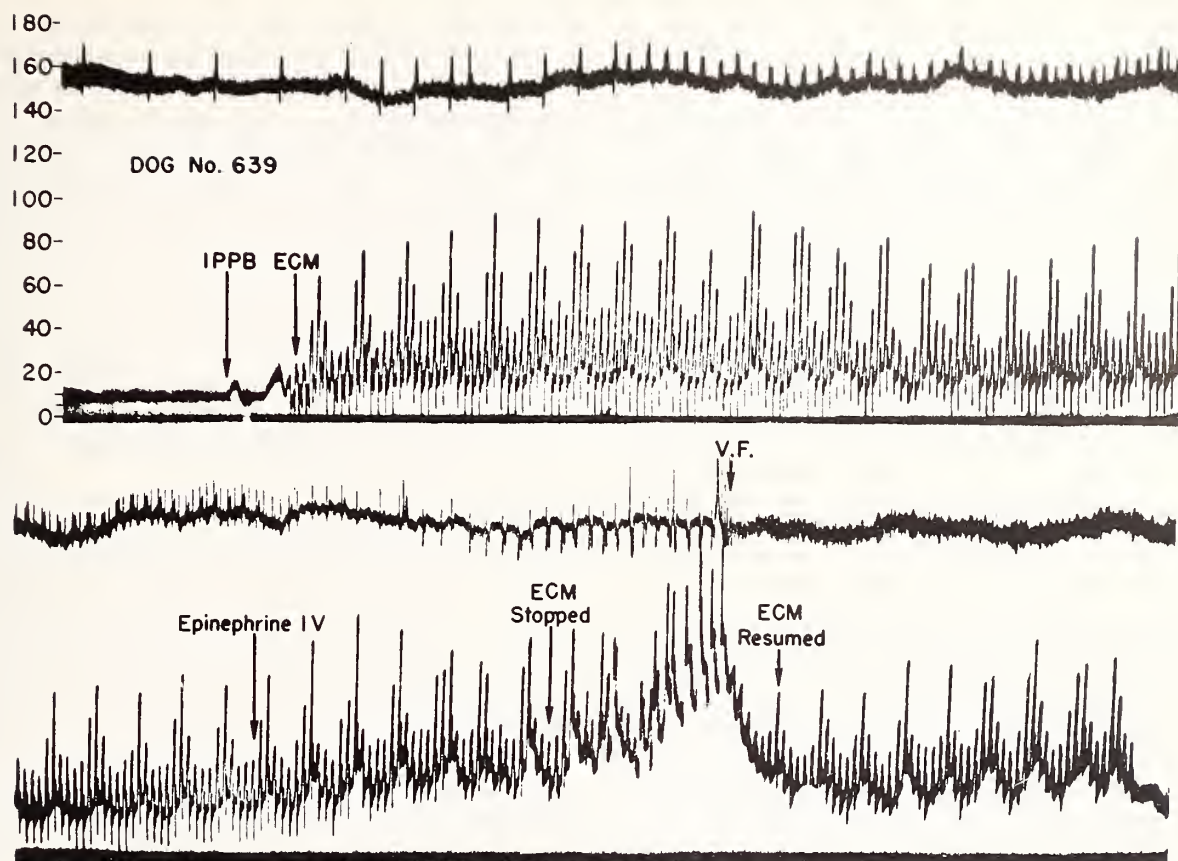


Figure 3. Continuous tracing showing rising pressure, ECM stopped and development of ventricular fibrillation (V.F.) typical of epinephrine failures in Groups I and III and all animals in Group V.

following clamping of the endotracheal tube but was restored to 90 per cent or above following positive pressure ventilation. In dog No. 459 both pH and oxygen saturation then deteriorated as resuscitation attempts continued unsuccessfully.

Each of the five animals in Group V developed ventricular fibrillation. Three were defibrillated and maintained spontaneous blood pressure at 6, 9 and 22 minutes after beginning resuscitation. The other two were still fibrillating at the end of the 30 minute resuscitation period. Since good massage pressure was being maintained and a vigorous fibrillation was demonstrated by EKG, efforts were continued and

spontaneous sustained blood pressure occurred after 38 and 41 minutes of ECM.

In Group VI, within one minute after the injection of 44.5 meq. sodium bicarbonate and 0.5 mgm. epinephrine both systolic and diastolic massage pressure rose. ECM was stopped within three minutes in each of these five animals who then maintained blood pressures above baseline for five to ten minutes (*Figure 5*). None of this group fibrillated.

Discussion

During the pilot experiments establishing the standard preparation for anoxic arrest it was noted

TABLE 2
GROUP II

	CaCl ₂	Saline
Survivors	4	6
Failures	6	4
V.F.	1	2
Ave. massage time of survivors	10.7 min.	10.8 min.

TABLE 3
GROUP III

	Epinephrine	Saline
Survivors	7	4
Failures	3	6
V.F.	4	1
Defibrillated	1	0
Ave. massage time of survivors	3.5 min.	9.3 min.

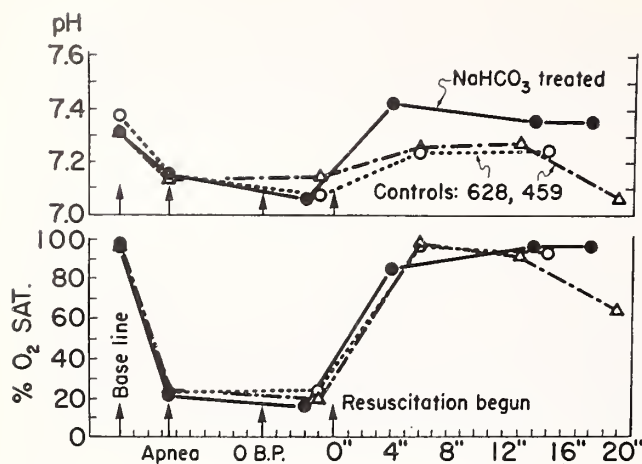


Figure 4. pH and oxygen saturation changes during anoxic cardiac arrest and resuscitation.

that if no attempts at resuscitation were made the animals invariably died. Although the absence of arterial flow was not specifically demonstrated it was felt that the complete absence of blood pressure fluctuation was sufficiently analogous to the clinical situation to make this a useful preparation. The additional five-minute delay before beginning resuscitation was used so that positive effects might be more easily demonstrated.

Having completed Groups I and II, we noted that survival in our saline controls was considerably better in Group II. This suggested to us that with increasing experience we were able to resuscitate more animals and that possibly our failure to achieve the uniformly good results reported by Pearson and Redding¹⁴ was related to our inexperience in resuscitation. For this reason we did Group III as a repetition of Group I.

We were concerned with the high incidence of refractory ventricular fibrillation. Acidosis is known to lower the ventricular fibrillation threshold³ and the presence of acidosis in cardiac arrest has been noted previously both in dogs⁶ and humans.^{1, 9, 19} The few animals in Group IV were studied to establish that acidosis also occurred in our preparation and that this was reversible by the use of sodium bicarbonate. The uniform occurrence of ventricular fibrillation in Group V suggested that ventricular fibrillation was not associated with the trauma of the direct cardiac puncture. Finally in Group VI the correction of acidosis by the use of bicarbonate followed by the use of epinephrine led to rapid resuscitation in the animals tested.

Although the use of vasopressors and cardiotonic agents is frequently mentioned in the literature the

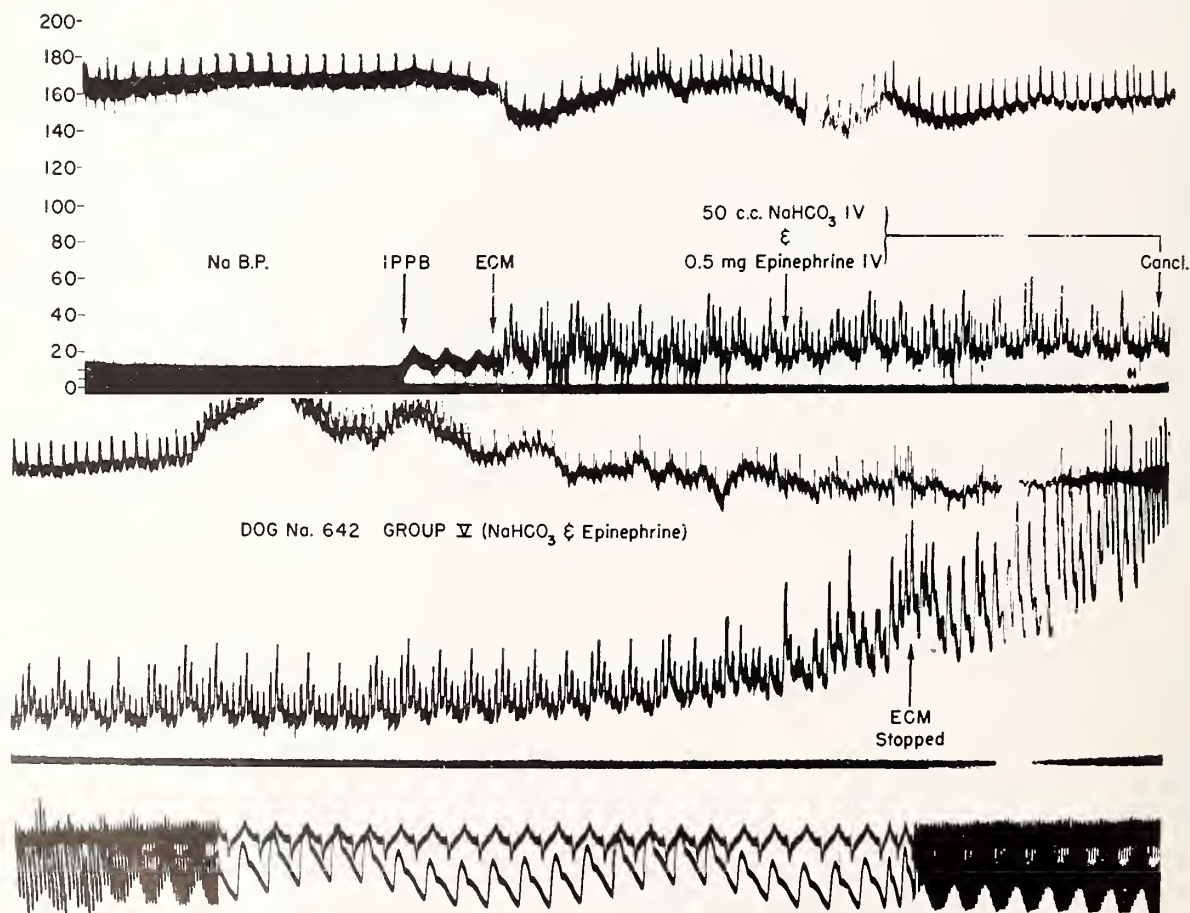


Figure 5. Continuous tracing of typical changes in Group VI.

correction of acidosis by sodium bicarbonate or buffering agents has not received sufficient emphasis. It is our present clinical practice to treat cardiac arrest by the immediate use of artificial ventilation and external cardiac massage. As soon as a vein can be secured sodium bicarbonate in 50 ml. doses is given and repeated at approximately five-minute intervals. If resuscitation is not accomplished within a very few minutes 0.5 mgm. doses of epinephrine are then given intravenously.

Acknowledgment

The assistance of Mr. Shannon Lucas and Mr. George Buckaloo is gratefully acknowledged.

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GALLEY PROOF CORRECTIONS

There is sometimes a misunderstanding about changes in an article on the galley proofs and the reluctance of the JOURNAL to make extensive alterations. The reason for this is quite simple and easily understood when one knows all the facts. The article has already been set in type. To make extensive changes requires that the typesetting be done over, at an additional cost which may even exceed the original, because it is slower work to fit pieces together than to set an entire article in type. It is also obvious, when one stops to think about it, that an alteration in the first few lines of a paragraph will probably make it necessary to reset the entire paragraph. This, of course, increases greatly the cost of printing and should be avoided as much as possible. The galley proof is for correction of errors, and a rewriting of the article should be done on the original copy before it is submitted for publication.

The President's Message

DEAR DOCTOR:

The Kansas Regional Medical Program, which is the official title for the so-called Heart-Cancer-Stroke program, is operational. Dr. Charles Lewis of the Medical Center is the director. Dr. Lewis and his staff have conferred with the physicians and community lay leaders in southeast Kansas and northwest Kansas concerning the development of activities in those areas. An operational grant is in the process of development in the Great Bend area. The southwestern sector of the program has been set up in Wichita with Mr. Dallas Whaley as coordinator.

The concept of the regional medical program is somewhat hard to grasp. Essentially, this is a program to be initiated at the grass roots level. In the several interested regions of the State, the physicians, allied health groups, and civic leaders set up their organization and determine what project or projects they wish to pursue. The project must be in a more or less concrete form. The project will be reviewed by a Scientific Advisory Committee, will go to the Regional Medical Center in Kansas City for review, and will be passed on by the Governor's Advisory Council for Regional Medical Programs. If favorably considered, it goes to Washington to be passed on by the National Council. If approved there, operational funds will be allocated to the State for the implementation of the project.

Several basic points must be kept in mind. This is a regional program which must extend its influence beyond any particular hospital, city or county. The role of the Kansas Regional Medical Program at the Medical Center is essentially that of a catalyst. It does not intend to direct the thinking or activities of the local programs, but offers stimulation and counsel. It is to be remembered that this is essentially a program of education as expressed in the first three paragraphs of Public Law 89-239. (See Editorial, page 352.)

Sincerely,



President





The Concept of Usual and Customary

The Federal government embraces the usual and customary fee concept under community range maximums in payment for medical services. Fixed schedules are difficult to administer and have proven unpopular by all concerned, so this new procedure is the current method of choice. As of August 1, the Dependents for Servicemen program (the original medicare now known as CHAMPUS) will pay usual fees. Vocational Rehabilitation is virtually on the same basis except that procedural problems caused them to substitute a \$5.00 conversion factor on the 1966 Kansas Relative Value Scale for the range maximum. The Veteran's Home Care program is in the process of converting, and rumor has it that other federally affiliated health care agencies are equally interested. Before long this will be universal.

The concept originated with medicine to enable Blue Shield subscribers to evaluate more accurately the true extent of their protection. Instead of placing a specified number of dollars against an unknown cost they are now covering the total, or, at their option, a per cent of the total expense. The plan is marketable as Blue Shield quickly discovered. It is popular with the individual subscriber and equally so to group purchasers. The concept takes the public another long step toward eliminating the economic hazard of accidents and unexpected illness.

But what has this done to the physician? There may be many developments not presently anticipated. However, some are already certain and others have strong probability factors. For instance, this concept establishes a maximum which tends toward compressing the variation into an ultimate one-price-per-service. Charges are no longer based upon an agree-

ment between a doctor and his patient. Charity service has all but been eliminated. Discounting charges to the patient in meager circumstances is almost a thing of the past. The exceptional fee to a patient willing to pay for the assurance of exceptional service is out of the picture. In its place is the standard charge, an equal cost to all, and medical service has become a commodity.

A second known factor is that this concept, unless outside forces artificially manipulate its course, will not adversely affect the economics of the practice of medicine. Pressures will be exerted by the purchaser, whether as an individual or a group or an agency. Providers, as the physician is now federally designated, will bend under the pressure but in the ultimate this will go only to a certain depth for a variety of perfectly obvious reasons.

In its broadest connotation the usual and customary concept has revolutionary impacts. It separates the business from the art of medicine. Health care is now a commodity under public control as are utilities, transportation, and communication. The doctor is the provider of an essential service to which the public has a right, and thereby has the right to regulate. Under such philosophy the service becomes equally available to all and its cost is equally shared. And that by any other name is socialist doctrine.

However, the subject may be viewed with equal candor from another perspective. The art of medicine is, as it always has been, confined to the patient-physician relationship. Only the economics have been altered through third party payment. To the patient this provides health protection and a guarantee against financial hardship or disaster. To the doctor

it is increased paperwork but a guarantee of payment without collection problems.

Some say this spells disaster. It is the bird that daily sold a feather for food until one day there were no more feathers with which to buy. And then he begged.

You can argue this as a political hazard more readily on other subjects than health. If usual and customary are those fees which are acceptable to the great majority of physicians (in Kansas some 95 per cent), and if financial structures (premiums or taxes) are maintained at levels to support the cost then perhaps the doctor's usual and customary concept is a happy solution for the public and for the profession.

What if health service has been declared an essential commodity to which all citizens are equally entitled? The doctor is hereby presenting a method by which this can be accomplished and still preserves freedom of choice, freedom of scientific judgment, and the relationship between the patient and his doctor, except for payment, has not been impaired.

PL 89-239

PL 89-239, entitled "Heart Disease, Cancer and Stroke Amendments of 1965," referred to in the

President's Page in this issue contains the following language regarding the purposes of the act.

TITLE IX—EDUCATION, RESEARCH, TRAINING, AND DEMONSTRATIONS IN THE FIELDS OF HEART DISEASE, CANCER, STROKE, AND RELATED DISEASES

Sec. 900. The purposes of this title are—

(a) Through grants, to encourage and assist in the establishment of regional cooperative arrangements among medical schools, research institutions, and hospitals for research and training (including continuing education) and for related demonstrations of patient care in the fields of heart disease, cancer, stroke, and related diseases;

(b) To afford to the medical profession and the medical institutions of the Nation, through such cooperative arrangements, the opportunity of making available to their patients the latest advances in the diagnosis and treatment of these diseases; and

(c) By these means, to improve generally the health manpower and facilities available to the Nation, and to accomplish these ends without interfering with the patterns, or the methods of financing, of patient care or professional practice, or with the administration of hospitals, and in cooperation with practicing physicians, medical center officials, hospital administrators, and representatives from appropriate voluntary health agencies.

BY YOUR SUPPORT, SHALL THEY KNOW YOU!

KaMPAC Workshop — Ramada Inn — Topeka, Kansas

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Early Registration: \$5.25

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Kansas Medical Political Action Committee

AMA House of Delegates

Report of Actions Taken at the 116th Annual Convention, June 18-22, 1967, Atlantic City, New Jersey

BETWEEN THE SPEAKER'S call to order at 10 a.m. Sunday in the Pennsylvania Room of Haddon Hall and the last voice vote at 1:12 Thursday afternoon, the American Medical Association's House of Delegates set two records.

One was attendance. After 95 per cent of the authorized delegates attended Sunday's opening session, 100 per cent—242 delegates out of 242—were in their seats for both the Tuesday and Wednesday deliberations. Thursday, the final day, attendance still stood at 240.

The other was accomplishment. All told, the House was presented with 151 items of business on which action had to be taken, including a record total of 123 resolutions from state medical associations; 18 reports from the Board of Trustees, three of which were nominations to fill Council positions; four reports from the Council on Medical Service; three reports from the Council on Constitution and Bylaws, one produced during the convention in order to implement an adopted resolution; two reports from the Council on Medical Education; and one report from the Judicial Council nominating affiliate members of the Association.

Dwight L. Wilbur, M.D., San Francisco, California, was elected president-elect. Dr. Wilbur has been a member of the Board of Trustees since 1963. He will serve in his new capacity for one year and will be installed as the Association's 123rd President at its annual convention in his home city in June, 1968.

Malcom E. Phelps, M.D., El Reno, Oklahoma, who has been field director of the Volunteer Physicians for Vietnam program, was elected Vice President of the Association.

Walter C. Bornemeier, M.D., Chicago, Illinois, was re-elected Speaker of the House and Russell B. Roth, M.D., Erie, Pennsylvania, was re-elected Vice Speaker of the House.

Four Trustees were elected to succeed themselves: Wesley W. Hall, M.D., Reno, Nevada; Irvin E. Hendryson, M.D., Denver, Colorado; Alvin J. Ingram, M.D., Memphis, Tennessee; and Robert C. Long, M.D., Louisville, Kentucky.

Edward R. Annis, M.D., Miami, Florida, was elected to complete the term on the Board of Trustees vacated by the death of Homer L. Pearson, M.D., Miami, Florida; and Burt L. Davis, M.D., Palo Alto, California, was elected to complete the term

as Trustee vacated by the resignation from the Board of President-Elect Wilbur.

At Sunday's opening session, the House heard outgoing President Charles L. Hudson, M.D., Cleveland, Ohio, urge physicians of the United States to "take the initiative and apply local solutions to local problems" in order to "persuade people that the proper function of government is to confine its activities to the support of private enterprise rather than to act as a competitor." Dr. Hudson stressed that it remains a continuing charge of physicians "to seek out and meet any discovered needs for health care" and observed that "One of the greatest challenges facing the medical profession now and in the immediate future . . . is the organization of community health care."

At his Tuesday evening inauguration as the Association's 122nd President, Milford O. Rouse, M.D., Dallas, Texas, followed a similar theme in pointing out that "The federal government is making its moves into areas where, to its own satisfaction at least, it is able to demonstrate unfilled needs for health care or health care planning. If we are alert to our responsibilities for filling all of the apparent vacuums in community-wide health programs, we can eliminate areas which may seem to demand government involvement.

"Leadership will be provided," Dr. Rouse said, "in these areas of community planning and the provision of community health services for all people. The only undefined factor is the source of that leadership. If it is not the physicians of the community, it will be government in one of its many forms."

In his report to the House Thursday, President Rouse elaborated on that theme and listed what he considers to be some of the solutions to the problems facing medicine. Among the items he included were more unity within the medical profession; greater interprofessional harmony with all other elements of health care; better communications between physicians and their societies at every level, and between physicians and the public; increased participation by physicians in the deliberations and programs of the medical associations; more activity by physicians in the political and civic affairs of their communities; and the development of citizen interest in matters of over-all health.

"As we have done in the past," the President told

the House, "we shall gladly respond to requests from government or from any other source for advice on health matters. . . . But, as in the past, we shall insist that we be approached in good faith, with the assurance that our freedom of judgment and freedom of action will be preserved.

"Our future," he concluded, "will not be determined by those who oppose us, but by our own willingness to accept the responsibilities which are naturally ours."

Actions of the House

Of the ten reports from councils considered by the House, all were adopted in their presented form except two from the Council on Medical Service which were amended and adopted. Of the 18 Board of Trustees reports, 13 were adopted as presented; two were amended and adopted; two were accepted for information; and one was referred back to the Board along with state resolutions on the same subject.

After many hours of Reference Committee hearings and additional debate on the floor of the House, 27 of the 123 state resolutions were adopted; another 25 were amended and adopted; 27 were referred to the Board or to one or more councils; 22 were combined with one or more others into substitute resolutions; eight were replaced by substitute resolutions; and 14 were not adopted.

The will of the House was expressed on a great variety of subjects.

Therapeutic Abortion

One subject that has generated interest not only in the profession but among legislatures and the public is therapeutic abortion.

The House updated the Association's 1871 policy on the subject which, according to the Reference Committee report which was adopted, was not only antiquated but lacked even the rudiments of adequate safeguards to prevent abuse. The updated policy, the House agreed, is in keeping with modern scientific knowledge, contains necessary safeguards and permits the physician to exercise his personal conscience and medical judgment in the best interest of his patient, over-riding objectives in any medical decision.

The following was established as policy of the American Medical Association:

. . . Recognizing that there are many physicians who, on moral or religious grounds, oppose therapeutic abortion under any circumstances, the American Medical Association is opposed to induced abortion except when:

(1) There is documented medical evidence that continuance of the pregnancy may threaten the health or life of the mother, or

(2) There is documented medical evidence that the

infant may be born with incapacitating physical deformity or mental deficiency, or

(3) There is documented medical evidence that continuance of a pregnancy, resulting from legally established statutory or forcible rape or incest may constitute a threat to the mental or physical health of the patient;

(4) Two other physicians chosen because of their recognized professional competence have examined the patient and have concurred in writing; and

(5) The procedure is performed in a hospital accredited by the Joint Commission on Accreditation of Hospitals.

It is to be considered consistent with the principles of ethics of the American Medical Association for physicians to provide medical information to State Legislatures in their consideration of revision and/or the development of new legislation regarding therapeutic abortion.

Health Care Cost

"Today . . . the ability of the physician to serve his patient is being handicapped by the rapidly rising prices of the various components of health care." That is a statement from the Board of Trustees report adopted by the House with the provision that it be widely disseminated for study and evaluation as to its applicability in local areas.

As further efforts in this direction, the House referred to the Board and to the Council on Medical Service a resolution that the AMA "consult with insurers in an effort to change their policy of insurance coverage so that payment can be made for diagnostic procedures and minor surgery performed in the physicians' office and/or in the hospital outpatient department"; adopted a resolution that the Association petition congress to remove the restriction on first-dollar deduction from income tax laws for health care expenditures; and adopted the overall policy that "physicians . . . continue to do everything possible to help the public conserve its health care dollars."

Government Health Programs

As might be expected, a great many reports and resolutions dealt directly or indirectly with the Association's relationships with government and with the multitude of government programs existing or proposed in the health field.

The House re-affirmed Association policy that "The medical profession has long and consistently held to two basic positions concerning personal health care and its financing: that no one should go without needed care because of inability to pay, and that responsibility for payment rests first on the individual himself and then, to the extent that he is unable to pay, on his family, the community, the county, the state, and, to the extent that lesser levels

of government are unable to finance the care, the federal government."

Regarding the Title XIX program, the House made it policy that "the medical profession should now take a firm stand in support of the Title XIX approach in improving the health and the delivery of health care services to the needy of the nation."

Recommendations adopted by the House are that the medical profession take a strong stand in support of implementation of Title XIX "while still seeking such changes in the federal legislation and/or regulations as will improve this program; that it urge organized medicine to take a leading role in formulating and directing Title XIX programs at the state and local level . . . and that it incorporate in such planning the use of existing voluntary mechanisms and private insurance carriers, wherever feasible, utilizing the usual and customary fee principle, thus bringing within the mainstream of present medical care systems the provision of quality health care for all Americans."

More generally, in connection with any and all government medical care programs, guidelines were adopted by the House:

The medical profession in any community is best represented by the local medical society and its officers. They should be consulted initially, and during the process of planning of any and all projects for the care of the sick and the preservation of health.

In proposing any new facility, it shall be first determined that existing facilities are so inadequate that only a completely new facility will provide a solution.

The responsibility for the health needs of a community basically resides at the community level, and all the local resources . . . shall be examined before the community accepts government monies.

If it is deemed advisable to operate a government-financed facility in a community, it shall in no way be binding upon a physician to refer his patients there; to coerce a physician to service the facility; and this facility must in no way infringe upon the private practice of medicine.

These projects should not be developed or operated in such a manner as to establish a precedent that could lead to a governmental controlled medical care system in this country.

Physician Control Over Collection and Disbursement of Professional Fees

In adopting a report of the Council on Medical Service regarding collection and disbursement of professional fees, the House reaffirmed past action and provided clear, consistent policy statements reflected in these thoughts which are elaborated in the full report:

1. It is proper for the physician to establish the fee he charges to any patient for professional service rendered, with the recognition that a duly constituted

committee of his peers may appropriately review and pass upon the equity and justice of his charge.

2. It is proper for third party agencies to make payment of professional medical fees for patients.

3. It is proper for a physician to work with other physicians in a team approach to the provision of medical service, recognizing that each is entitled to compensation according to the value of his services and that charges attributable to each physician's service shall be made clear to the patient.

4. It is proper for a physician who provides personal supervision and direction for a physician-in-training to charge for the professional medical service rendered.

5. A physician should not enter into a contract or agreement with a hospital whereby the hospital acts as the agent for him unless it is with the consent of the physician and of the medical staff.

6. Physicians, collectively in hospitals, may properly establish special medical staff funds, wholly under their own control, which they may support as they see fit, disburse as they may agree.

7. Fees for professional medical services are properly paid only to the responsible physicians and may not be appropriated by any other person or agency.

8. The physician is the sole arbiter as to the ways he may dispose of his professional income, without duress, consistent with the laws of the land and the Principles of Medical Ethics of this Association.

Millis Commission and Commission on Research

Because the contents of the Millis Commission report (Citizens Commission on Graduate Medical Education) relate so specifically to the roles of the Councils on Medical Education and Medical Service, the two councils have assumed responsibility for assembling critiques and information.

Again, the House urged any interested individuals and groups to forward comments and suggestions to the Executive Vice President for transmittal to the committee.

Medicine and Osteopathy

The House adopted the following recommendations of the Board regarding the medical profession's relationships with osteopathy:

1. Authorize the Board of Trustees to begin promptly negotiations directed toward beginning official change of schools of osteopathy to schools of medicine. (It is understood that from the American Medical Association funds will be required to conduct these negotiations, and assistance in identifying and securing additional funds from other sources to support efforts toward changing the schools.)

2. Authorize the Council on Medical Education to undertake negotiations to establish means by which selected students with proven satisfactory scholastic ability in schools of osteopathy may be considered by schools of medicine for transfer into medical school classes.

The primary issue in the relationship of medicine and osteopathy, as recognized by the House, seems to be not that of cultism as opposed to science. Rather the issue appears to be one level of medical education and practice as opposed to another and lower level of education and practice. The extensive and growing licensure of osteopathic physicians for the unrestricted practice of medicine and the nature of osteopathic education strongly indicate that time alone will resolve shortly the problem of cultism in relation to osteopathy.

Members' Disability Insurance Program

The House adopted the report of the Reference Committee on this subject, and referred to the Board a number of resolutions pertaining to it.

The committee's report, as adopted, recommended that the House authorize the Board to make every effort to continue the AMA Members Group Disability Insurance Program with the same premium-benefit structure. It also recommended the following guidelines to aid the Board in negotiating and executing the necessary contracts and in the future operation of the program:

1. The contract should provide ample assurance that disability claimants will be treated equitably and justly.
2. The carrier should guarantee benefits and premiums for a period of at least five years in order to assure the stability of the program.
3. Promotional literature should be approved in advance by the Board or its designee. All measures within the bounds of dignity and ethics should be utilized to promote the program.
4. A continuous ongoing review of the entire program should be maintained. The insureds and other members should be made aware that such a review may reveal in the future the necessity for a revision of the program at the end of the five-year period.
5. Information regarding the operation of the program, its financial aspects and the processing of claims should be available to the Board for review at any time.
6. An AMA Disability Insurance Review Committee should be continued and should provide a mechanism for claims review.

Political Action

The House supported AMPAC and the state PAC organizations by adopting a resolution recognizing "that leadership at all levels of medicine should make individual commitment to state PAC-AMPAC membership and local PAC programs, wherever this is legally possible.

JOHN C. MITCHELL, M.D.

LUCIEN R. PYLE, M.D.

Delegates from Kansas

DRIVING FITNESS

Auto accidents don't just happen.

They are caused.

An overwhelming proportion of them are caused by some human element. Sometimes this human element involves a driver with a physical or emotional condition that makes him a less than ideal driver.

You may think you are in good health. You may have an excellent safety record. Yet, under certain circumstances, it can be dangerous for you to be in the driver's seat, says a pamphlet of the American Medical Association.

Doctors agree that the emotional stability of the driver is as important as any single factor in maintaining traffic safety. That's why you owe it to others—and to yourself—not to drive when you have serious problems on your mind. If you are thinking about that argument you had before you left your home or office; if you're in a depressed or angry "I-don't-care-what-happens" mood; if you're very worried about a personal problem . . . you're better off not driving.

The sleepy driver causes many accidents. In fact, a sleepy driver is as much of a hazard as a drinking one. Dozing at the wheel can occur in broad daylight as well as at night. When making long trips in the summer vacations soon to come, rest every two hours and drink coffee or cola to stay alert. Next time you feel the least bit drowsy while driving, pull up and rest up.

Research proves that many medicines, not just a few, can affect the way in which you handle the wheel. Certain commonly used drugs such as antihistamines, cold tablets and mild sedatives may dull your reflexes or impair your coordination. Stimulants can make you nervous. Tranquilizing drugs can cloud your judgment and interfere with driving skills. Consult your doctor about the side effects of any drugs you take. Don't drive until you know that the medicine or drugs you take won't affect your driving.

It goes without saying that alcohol and gasoline are a dangerous combination. You don't have to be drunk to be dangerous. Even a small amount of alcohol can impair judgment and reactions of many persons.

Driving calls for clear, healthy eyesight, side vision, judgment of distance and the ability to see well at night. Have your eyes tested regularly. If you have glasses for distance vision, don't forget to wear them.

If you have a nervous disorder, or a heart condition, or diabetes, ask your doctor whether you are a safe driver. This also applies as you get older. Past 65, reflexes and coordination tend to be a little slower.

—*AMA Health and Safety Tips*



Personalities—IN KANSAS MEDICINE

Ivan H. Carper completed a four-year general surgical residency at Kansas City General Hospital in July, and is now affiliated with the Axtell Clinic at Newton. Dr. Carper was formerly in General Practice in the Halstead-Sedgwick area.

The following physicians have completed 150 hours of accredited postgraduate medical study and have been re-elected to active membership in the AAGP: Lynn E. Beal, Fredonia; Fred E. Brown, St. Marys; J. Roderick Bradley, Greensburg; Richard H. Claiborne, Baxter Springs; Robert E. Banks, Paola; and Francis H. Buckmaster, Elkhart.

Certificates as Diplomates of the American Board of Abdominal Surgery were presented recently to H. C. Collins, Beloit; Funston Eckdall, Emporia, and Kenneth R. Grigsby, Coffeyville.

A contribution in honor of James W. Campbell, Lawrence, has been given to the Lawrence Memorial Hospital. The honor fund was established by Dr. Campbell's friends and former patients in recognition of his many years of private practice in Lawrence. He is now on the staff of Watkins Hospital at the University of Kansas.

Harry R. Custer, Colby, attended the annual meeting of the AMA in Atlantic City in June, as a delegate representing the American Society of Abdominal Surgery. He is chairman of the committee for the American Board of Abdominal Surgery.

The judges of the Shawnee County District Court recently appointed A. A. Fink, Topeka, coroner for the Third Judicial District.

Keith Kelly moved from Clay Center to Downs the first of August to take over the practice of William St. Clair at the Downs Clinic. Dr. St. Clair has been drafted into military service.

The Sedgwick County Commission has announced the appointment of Arthur Fromm, Wichita, as medical director of the Sedgwick County Hospital. Dr. Fromm replaces Leonard J. Hirsch, also of Wichita, who resigned the position recently.

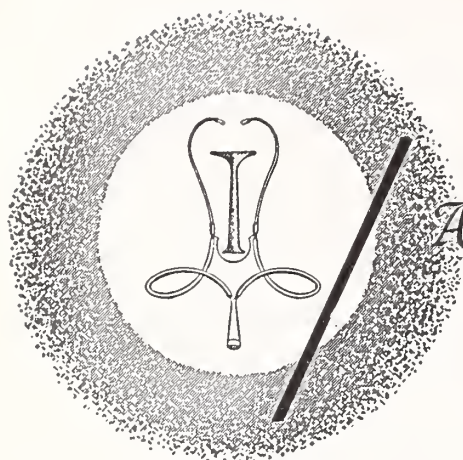
George Richards observed his 99th birthday anniversary at Mount St. Joseph home in Kansas City, Kansas, in June. Dr. Richards was in general practice for many years in the Kansas City area.

George W. Hammell, El Dorado, was one of the featured speakers at a weight reduction and control course sponsored by the TOPS clubs of El Dorado and the Kansas Heart Association in June.

A scholarship fund for medical students has been established by the Fort Scott Kiwanis Club in honor of their oldest living charter member, John Hunter, now of Hutchinson. Dr. Hunter, who practiced medicine in Fort Scott until four years ago, was made a member of the Kiwanis Legion of Honor at the time he moved to Hutchinson and had over 35 years of perfect attendance since the charter of the club in July, 1926.

Charles T. Stubblefield, Kansas City, has been re-elected president of the American Cancer Society, Wyandotte County Unit.

(Continued on Page 360)



Announcements

Professional meetings, conferences, and postgraduate courses of national importance are listed for the Doctor's CALENDAR. Notice of the session is posted in advance to allow the physician time to make preparations.

SEPTEMBER

- Sept. 7-9 American Association of Obstetricians and Gynecologists, Hot Springs, Virginia. For Information: Robert B. Wilson, M.D., 200 First Street, S.W., Rochester, Minnesota.
- Sept. 10-15 Flying Physicians Association, Williamsburg, Virginia. Write: Albert Carriere, 332 S. Michigan, Chicago 60604.
- Sept. 18-21 American Academy of General Practice, Dallas. Write: Mac F. Cahal, Exec. Dir., Volker Blvd. at Brookside, Kansas City, Missouri 64112.
- Sept. 21-24 American Medical Writers Association, Palmer House, Chicago. Elizabeth G. Dailey, Exec. Sec., P.O. Box 267, Arlington, Virginia 22210.
- Sept. 25-27 Kansas City Southwest Clinical Society, Hotel Muehlebach, Kansas City, Missouri. For Information: Robert S. Mosser, M.D., Director of Clinics, 3036 Gillham Road, Kansas City, Missouri 64108.

OCTOBER

- Oct. 2-6 American Association for Laboratory Animal Science (formerly Animal Care Panel), Sheraton-Park Hotel, Washington, D. C. Exec. Sec.: Joseph J. Garvey, 4 E. Clinton, Joliet, Illinois 60434.
- Oct. 2-6 American College of Surgeons, Conrad Hilton, Chicago. Write: John P. North, M.D., 55 E. Erie, Chicago 60611.
- Oct. 4-5 Annual Midwest Interprofessional Seminar, *Diseases Common to Animals and Man*. University of Missouri, Columbia. Write: Dr. D. C. Blenden, Dept. of Veterinary Microbiology, Section of Public Health, School of Veterinary

Medicine, University of Missouri, Columbia 65201.

POSTGRADUATE COURSES

University of Colorado:

Oct. 2-6 *Hospital Medical Staff Conference* (Estes Park)

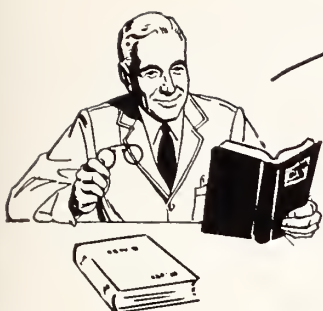
Oct. 2-6 *Premature Infant Care*

For further information, write the Office of Postgraduate Medical Education, University of Colorado School of Medicine, 4200 E. Ninth Avenue, Denver 80220.

Oct. 14-20 *Annual Otolaryngologic Assembly*, Illinois Eye and Ear Infirmary, Chicago. Postgraduate basic and clinical program designed to bring specialists current information in medical and surgical otorhinolaryngology.

A separate, correlated course *Head and Neck Radiology*, will be conducted on October 12-13 by the Department of Radiology. Write: Department of Otolaryngology, University of Illinois College of Medicine, P.O. Box 6998, Chicago 60680.

Oct. 26-28 *Today's Hospital Problems: An Interdisciplinary Approach*, Tides Hotel and Bath Club, Redington Beach, Florida. A leadership course for Chiefs of Staff, Hospital Administrators and Governing Personnel (or Trustees), sponsored by the Mound Park Hospital Foundation and the University of Florida. Rights to limit registration reserved by the sponsors. \$75 fee. 18 accredited hours by AAGP, if desired. Address: Postgraduate Medical Education, Mound Park Hospital Foundation, Inc., St. Petersburg, Florida 33701.



Book REVIEWS

SYNOPSIS OF DERMATOLOGY by Wm. D. Stewart, Julius L. Danto and Stuart Maddin. C. V. Mosby Company, St. Louis, 1966. 664 pages illustrated. \$10.85.

The authors' stated purpose in writing this book is to provide the non-dermatologist with "concise but pertinent information, methods of diagnosis, and treatment of common and some uncommon skin disorders." In spite of the fact that the number of such books has increased logarithmically in the last five years, this work ranks as one of the best of its kind. The color illustrations are excellent, occupying the entire page with no margin allowance, giving an illusion of depth and a realism which I have not before encountered. These photographs are also unusual in that they present common things the way they occur most commonly—rare in a textbook! Other useful features are briefly-discussed, differential diagnoses of more common disease entities and general discussions of common signs such as pigmentation and symptoms such as itching.

If the work has a failing, it is in the number of inaccuracies. These range from the gross (dermatome-muscle forming tissue) to the relatively unimportant (alopecia areata shows "no evidence of inflammation"). A puzzling—and consistent—error is the advice that Griseofulvin (in its micronised form) should be prescribed in a dosage of 1 gm. daily. It is generally accepted that the dose of micronised Griseofulvin is 500 mg. daily (or about 5 mg. per pound of body weight per day for children) and that 1 gm. daily is necessary only under very unusual circumstances. Since this is a commonly used and costly medication prescribed over long periods of time, such advice on dosage could prove expensive. A number of other minor inaccuracies do not entirely support Dr. Sulzberger's contention in the Foreword that the book is "exceptionally complete, accurate, and up-to-date." A feature which I found

somewhat annoying was the constant repetition of the entire contents of the same antipruritic lotion innumerable times with minor variations. Undoubtedly it is a good idea to have one antipruritic lotion, know it well, and use it often, but it is a great waste of space to repeat the formula for the entire lotion every time the treatment of itching arises.

Such criticisms are, however, relatively minor and do not seriously detract from the overall value of the book.

To briefly discuss individual sections: The chapter on therapy is very practical. It is stressed that the non-dermatologist (and the dermatologist, for that matter) should have a limited therapeutic armamentarium and know it intimately. (As an aside, I seriously doubt whether there is ever any necessity to use potassium permanganate. It stains everything for weeks afterwards and I doubt that it is in any way superior to $\frac{1}{8}$ per cent silver nitrate which does not stain nearly as much.) A list of materials used for patch testing to common allergens in appropriate strength should be very useful and is provided in detail. The word of caution about the use of Neomycin should be heeded: This antibiotic is a much more common sensitizer than is generally realized and is particularly insidious in that eczematous lesions treated with Neomycon-steroid combinations simply do not get better. It takes some time—and sometimes consultation—to realize that the patient is in fact allergic to Neomycin and would get better simply by stopping the treatment. A list of drugs and the common types of reactions (dermatologic) is worthwhile for reference. Atopic dermatitis is well summarized although the discussion on therapy is very diffuse and probably not very useful. A particularly valuable section is the discussion on the complications of vaccination and the use of vaccinia immune globulin. The discussion of exanthems of the Echo and Cocksackie viruses is timely and useful. A

brief section on exfoliative dermatitis ends with the advice to seek consultation. The authors have restrained themselves admirably in their attempt not to discuss this vast problem!

As a genuine "synopsis" of dermatology well produced, of manageable size, and beautifully illustrated, this book should serve as an admirable ready reference in the office of the practitioner who has neither time nor inclination to wade through larger volumes, or be frustrated by the superficial character of most smaller works.—*H.J.W.*

HUMAN DEVELOPMENT edited by Frank Falkner; 29 contributors. W. B. Saunders Company, Philadelphia, 1966. 644 pages illustrated. \$20.00.

In the preface the stated purpose of the book is to "—provide a practical working tool for pediatricians and also serve as a baseline for active investigators in the field of development."

The 19 chapters embrace the genetics, biology, physiology and biochemistry of growth as well as the development of the nervous system, skeleton, dentition, vision and immunity. Also discussed are psychological and cultural growth.

"Physiological Growth" is a 27-page chapter by physiologist Nathan W. Shock. It contains some good basic material but reads poorly and is somewhat out of date.

The chapter on the "Developmental Aspects of Biochemistry" by L. S. Filer, Jr., a pediatrician, is only five pages long and the small amount of information is not particularly remarkable.

"The Influence of Hormones on Human Development" is well written and illustrated. This 33-page chapter by Henning Andersen, a Danish pediatrician is a good reference.

"Development of the Nervous System in Early Life" is a 69-page chapter by five French physicians. It is divided into three parts. The first is concerned with anatomy, the second is devoted to the electroencephalograph, and the third deals with neurological signs in neonates. The third section is the only one likely to be of value to most physicians.

"Psychological Development of the Child" is an 81-page chapter written by three psychologists. The material is well presented. A section by a pediatric psychiatrist would have been interesting.

"Maturation of the Skeleton" is an excellent 37-page chapter by Roy M. Acheson. It presents a discussion of the various methods of determining the bone age. Enough charts and diagrams are included

to make it useful as a guide for such a determination.

"Development of Immunity" by Mathea Allansmith is well written and current.

Human Development is worthwhile as a reference for the pediatrician. It has a broad scope and the coverage is variable.—*D.R.R.*

Personalities

(Continued from Page 357)

Calvert J. Winter, Kansas City, is the newly elected president of the Kansas City Southwest Pediatric Society. Jack K. Burr, Prairie Village, is secretary-treasurer.

Bruce Hodges, Olathe, has been named director of the Johnson County Health Department, replacing Robert Cavitt, who resigned recently to move to Alaska.

ALTITUDE SICKNESS

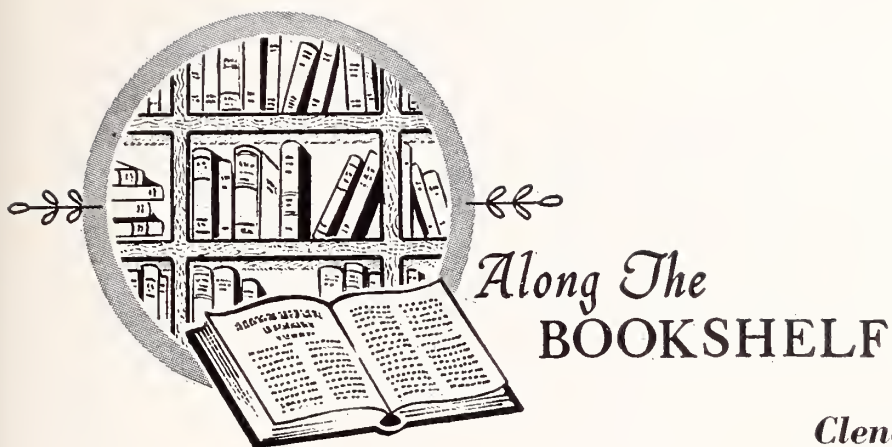
Women apparently suffer fewer symptoms of altitude sickness than men, according to a study of eight girls who spent 10 weeks at the summit of Pikes Peak, Colorado (altitude 14,110 feet).

Dr. Charles W. Harris and associates from Fitzsimons General Hospital, Denver, evaluated symptoms in University of Missouri coeds who had not previously been exposed to high altitudes.

Significant illness occurred during the first four days, the predominant complaints being headache, drowsiness, fatigue and insomnia. Menstrual changes consisted of decreased flow in five girls.

Gastrointestinal complaints and palpitations, shortness of breath and chest pains—fairly common in men—were rarely experienced by the girls. Weight loss, reflecting appetite, averaged less than two pounds for the girls during the first week, whereas eight men of similar age had an average loss of about five pounds.

Several medications for relief of symptoms of altitude sickness were evaluated. Methylene blue and codeine were possibly of benefit. Aspirin was considered to be very beneficial for relief of headache and muscular complaints.—*Aerospace Medicine*, November, pp. 1163-1167.



RECENT ACQUISITIONS

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KANSAS STATE DEPARTMENT OF HEALTH
Division of Preventable Diseases—Division of Vital Statistics—Kansas Morbidity Incidence
Summary of Cases Reported in April, 1967 and 1966

Diseases	April			January-April Inclusive		
	1967	1966	5-Year Median 1963-1967	1967	1966	5-Year Median 1963-1967
Amebiasis	1	2	2	5	3	5
Aseptic meningitis	—	—	—	—	—	—
Brucellosis	—	—	—	—	1	1
Diphtheria	—	—	—	—	—	—
Encephalitis, prim., infect.	1	—	—	2	—	2
Encephalitis, post-infect.	—	—	*	—	—	*
Gonorrhea	363	175	251	1265	888	951
Hepatitis, infectious	12	17	27	61	77	91
Meningococcal meningitis	1	2	2	2	6	4
Pertussis	3	1	2	3	3	8
Poliomyelitis	—	—	—	—	—	—
Rheumatic fever	—	—	—	2	—	2
Salmonellosis	9	26	18	56	62	59
Scarlet fever	4	15	12	48	65	61
Shigellosis	3	12	4	10	32	32
Streptococcal infections	203	293	203	1282	1138	1138
Syphilis	112	88	88	354	352	352
Tinea capitis	14	6	9	27	20	27
Tuberculosis	23	26	24	77	109	83
Tularemia	2	—	—	7	—	3
Typhoid fever	—	1	—	—	2	—

* Statistics for 5-year median not available

SMALLPOX VACCINATION
REQUIREMENTS—MEXICO AND
UNITED STATES

Public Health Service Surgeon General William H. Stewart and Dr. Rafael Moreno Valle, Mexican Secretary of Health and Welfare, announced on June 7, 1967, that travelers between the United States and Mexico will no longer be required to present a smallpox vaccination certificate, provided they have visited no other countries within 14 days prior to crossing the border. Discontinuance of the vaccination requirement for the U. S. A. became effective with the announcement, which was made in Houston, Texas, at a meeting of the U. S.-Mexico Border Public Health Association. The change in Mexican regulations is scheduled to take effect on or before June 17, 1967. (Reported by Foreign Quarantine Program, NCDC.)

NEW MEMBERS

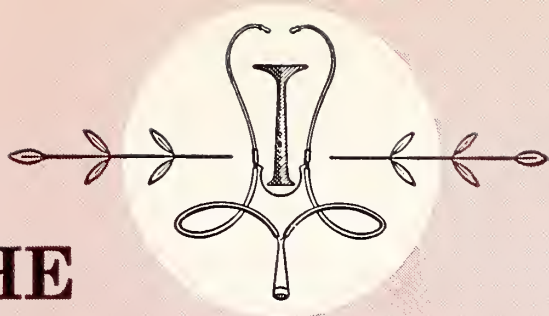
The JOURNAL takes this opportunity to welcome these new members into the Kansas Medical Society.

- David L. Coe, M.D.
5411 Leavenworth Road
Kansas City, Kansas 66109

Robert C. McCullough,
M.D.
Everest Clinic
Everest, Kansas 66424
- Glen E. Hastings, M.D.
3909 Eaton Street
Kansas City, Kansas 66103

Raul R. Morffi, M.D.
51 North 12th
Kansas City, Kansas 66102
- George B. Howell, M.D.
6155 E. Harry
Wichita, Kansas 67207

Shih Y. Tsai, M.D.
K.U. Medical Center
Kansas City, Kansas 66103



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SEPTEMBER
1967

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NO IX

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PRECAUTIONS: Periodic examination of the blood is advisable. Nystagmus in combination with diplopia and ataxia indicates dosage should be reduced. The possibility of toxic effects during pregnancy has not been explored. **ADVERSE**

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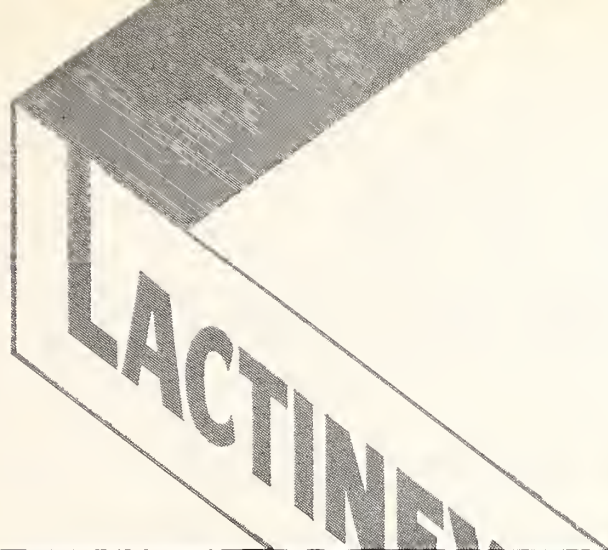
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No untoward side effects have been reported to date.

Literature on indications and dosage available on request.

References:

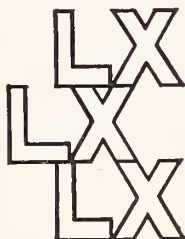
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The JOURNAL of the KANSAS MEDICAL SOCIETY

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Managing Editor and Advertising Manager: Mary Rogers, 315 West Fourth Street, Topeka 66603.

Business Manager: Oliver E. Ebel, 315 West Fourth Street, Topeka 66603.

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Deafness—Case Finding

Hearing Conservation for Kansas Children: A Cooperative Project in Preventive Medicine

EVALYN GENDEL, M.D.,* **ROBERT COZAD, M.A.,†** and
PATRICIA SCHLOESSER, M.D.,‡ *Topeka*

The Problem

FOR A NUMBER OF YEARS, physicians, health workers, educators, and parents in Kansas have been concerned about the lack of comprehensive hearing conservation programs for children in the State. In only a few of the larger cities have screening services been available.

Results from a survey by the State Department of Health in 1961 revealed that of the estimated 500,000 children enrolled in Kansas schools, at least 200,000 had never received a hearing test. This survey also indicated that the majority of students whose hearing had never been tested were located outside of the major metropolitan areas.

Several groups worked cooperatively for the solution of this problem: the Committee on Conservation of Hearing and Speech of the Kansas Medical Society, the Division of Special Education of the State De-

partment of Public Instruction, the Division of Maternal and Child Health of the State Department of Health, and the Department of Hearing and Speech at the University of Kansas Medical Center. These combined study efforts led to the proposal of a proj-

A family is concerned because their child is underachieving in school and is a behavior problem at home. He appears to pay no attention to anyone. School personnel and parents are frequently surprised to find this kind of child suffering from a hearing loss, and they have been unaware of it.

ect devised to encourage the development of more universal hearing screening in the public schools. The Kansas State Department of Health was asked in 1961 to request Neurological and Sensory Disease funds through grants available from the U. S. Public Health Service. The purpose of the project was to demonstrate to communities the value of early identification of children with hearing disability. Through the activities of the demonstration grant, communities would have the opportunity to observe

* Evalyn S. Gendel, M.D., Assistant Director, Division of Maternal and Child Health, Kansas State Department of Health, Topeka, Kansas.

† Robert Cozad, Masters degree graduate student, Hearing and Speech Department, Kansas University Medical Center, Kansas City, Kansas.

‡ Patricia T. Schloesser, M.D., Director, Division of Maternal and Child Health, Kansas State Department of Health, Topeka, Kansas.

how early discovery of hearing loss resolves and prevents physical, educational, and emotional problems of children.

Special Equipment

Faced with a problem of a relatively small population distributed widely over a large geographic area, the Project was designed around a mobile unit which could be driven to isolated areas. Careful research and planning led to the design of a unit which included testing rooms meeting the most stringent standards for a noise-free environment. Hearing testing thus could be performed without interference from environmental noise.

This unit was equipped with conventional pure tone audiometers. In addition, a calibration laboratory was included as a part of the equipment to insure accurate performance of the testing equipment.

The Testing Program

ORGANIZATION

When the program was initiated, detailed information describing the project and its purpose was sent to all schools and medical societies in the State. The response to this announcement was overwhelming. Within three months after sending this information, requests to screen over 175,000 children were received. In selecting schools in which to begin testing, priority was given to rural areas where no form of hearing screening had previously been available.

PROCEDURE

The individual pure tone sweep check test is used for all screening. Both ears of each student are tested at an intensity of 10 db. (re: ASA norms) at the following frequencies; 250, 500, 1,000, 2,000, 4,000, 6,000, and 8,000 cps. If a child fails one or more frequencies in either ear, he is asked to return later during the day, re-instructed, and the screening test is repeated. If he again fails one or more frequencies in either ear, at the 10 db. level, he is given an air and bone-conduction pure tone threshold test. Medical referral is made on the basis of the results of this test of hearing acuity.

CRITERIA FOR REFERRAL

Criteria for medical referral is based on one or more of the following:

- 1. An air-conduction hearing loss of 10 db. or greater, at two or more frequencies in either ear in the frequency range of 250 cps through 3,000 cps;
- 2. A difference in air and bone-conduction thresholds of 10db. or more at two or more frequencies in either ear;
- 3. A history of ear problems and more than 10 db. hearing loss at one or more frequencies in either ear; or

- 4. A hearing loss of 10 db. or more at three frequencies in either ear in the frequency range from 4,000 through 8,000 cps.

PARENT NOTIFICATION AND PHYSICIAN REFERRAL

Referral consists of notifying the parents about children with hearing difficulty. This notification is done through the local school administration. The parents receive a letter of explanation from the school advising them to see their physician about their child's hearing. Included with this letter is a medical examination form which the physician is asked to complete and return to the Project. Return of these forms give an indication of the number of families who seek medical help. They also provide information about the types of medical conditions found.

Results

During the first nine months of the Project's operation, testing was completed on all of the children in ten counties which were located in various parts of the State. Over 18,600 children were screened. From this group, 725 or 3.9 per cent of the total group were referred to their family physician for examination. Table 1 shows the per cent of children from each grade who were referred.

TABLE 1	
PERCENTAGE OF CHILDREN, BY GRADE LEVEL, REFERRED FOR MEDICAL EXAMINATION BECAUSE OF HEARING LOSS	
Grade	Per Cent Referred
K	5.1
1	3.6
2	4.7
3	3.9
4	3.3
5	4.1
6	3.2
7	3.5
8	4.0
9	4.5
10	4.0
11	2.9
12	4.9

The striking fact seen in these results is that there was a relatively uniform degree of referral from both the elementary and secondary schools. Many hearing conservation programs report more hearing loss in the elementary grades, especially at the lower grade levels, than in the high school population.^{1, 2} Analysis

of such data often reveals that where there is less hearing loss in the secondary grades, screening programs have been conducted for many years. Early detection resolved the problems before the students reached high school. Information presented in this report would indicate a definite need to conduct hearing screening on all students, kindergarten through the twelfth grade, especially if school systems have not previously had a hearing screening program.

Another interesting fact related to the group of children referred for medical evaluations is that of an unbalanced sex ratio. Of the referred group, 71 per cent were males and 29 per cent were females. More than twice as many boys as girls were referred with a hearing loss. Although the male ratio in many diseases is increased over the female ratio, this is an especially wide difference.

Analysis of the type of hearing loss encountered in the group of students referred for medical evaluations revealed that 57 per cent had a conductive hearing loss; 32 per cent showed a sensori-neural loss; and three per cent had a part conductive, part sensori-neural loss. Information was not available on the type of hearing loss of the remaining eight per cent of this group.

Diagnostic Clinics

The effectiveness of any hearing conservation program is dependent upon how many children, once identified as having a hearing loss, receive medical diagnosis and treatment for resolution of the problem. Many conditions found in these children present diagnostic problems and frequently require consultation of an otolaryngologist. In some areas, family doctors often send patients 150 to 200 miles for consultation with an ear specialist. To provide diagnostic services more readily for those physicians who wished to use them, itinerant otological diagnostic clinics were made available through the Project.

If the family physician wishes a child to be examined by a consulting otolaryngologist, he makes this known to the Project team and an appointment is made for the diagnostic clinic. The physician is under no obligation to utilize this consultation service. There is no charge to the family referred by the physician for consultation provided by the diagnostic clinic. Only a diagnostic evaluation is performed. Recommendations and findings are then sent back to the family physician in the form of written reports. Treatment or additional referral is conducted by the referring physician.

Four diagnostic clinics were held during the first year of the Project's operation. Each clinic was scheduled to be held one month following completion of testing in a particular area. This lag between testing and the clinic allowed time for the parents to take

their child to their physician for an examination. With a school population varying from 2,000 to 3,500 students each clinic served a three or four county area. The size of the clinic and the number of consulting otolaryngologists was tailored to the population to be served. Clinic size ranged from 25 to 125 patients.

Utilization of the itinerant clinics was excellent. Of the 725 children referred during the first year to the family physicians, 230 or approximately 32 per cent, were sent to the diagnostic clinics for further evaluation.

Follow Up

Three months after completion of the first year of testing, the Project received medical evaluation forms from 67 per cent of the children who had been referred to a physician. The Project's public health nurse visited the families of the remaining 33 per cent who had not returned medical evaluation forms to the Project.

Table 2 shows the various reasons given by these families for not returning the form. The largest group reported in this table, Group A, did not seek a medical evaluation for their child primarily because

TABLE 2
REASONS GIVEN FOR NOT RETURNING
MEDICAL EXAMINATION FORMS FOLLOWING REFERRAL FOR HEARING LOSS

Group	Reason Given	Number Not Returning Forms
A	Parents indicated no desire for their child to see a physician.	112
B	Child was examined by a physician but physician or parent failed to return the form.	37
C	Child had previously been examined by a physician for a hearing loss and the parents felt no need to see a physician again.	25
D	Parents reported lack of financial means prevented them from seeking a medical examination for their child.	17
E	Parents did not understand recommendations or did not receive the referral form.	11
F	Project members unable to contact parents concerning unreturned forms.	25

of indifference to the problem. This reaction would seem to point to the need for greater public health education, especially among parents, about the importance of early resolution of hearing loss. Studies of hearing conservation programs which have operated over many years demonstrate that if medical attention is not sought the hearing loss will not improve or it will become more severe in over 50 per cent of the cases.³

Group B represented the children who were seen by a physician but either the physician or the parent did not return the medical evaluation form. In reality the family had sought a medical examination for their child.

Group C was composed of parents who were aware that their children had a hearing loss before the screening program. They had previously sought medical help. It is interesting to note that if these were the only parents who were aware of their child's hearing loss, it represented only about four per cent of the group who were referred for a medical evaluation.

Group D represented families who did not have financial means for a medical evaluation. Since the Project does not provide funds for medical care, many of the doctors were concerned about the care of medically indigent patients and where these children might receive assistance, especially if surgical procedures or long-term therapy were indicated. No public agencies in Kansas presently provide medical fees for hearing disability in the school age group. Local resources were explored by most doctors and families involved. Some results were successful and others frustrating.

Parents in Group E stated that they had not understood the recommendations or that they had not received the referral form. Perhaps improved communications from the school administration to the parents, concerning the referral form, or direct contact with parents by a Project member would have eliminated these difficulties. An improvement in this process has already been enacted.

Group F reported families with numerous and varied reasons for not returning medical forms.

Group G represents the number of families whom the Project had not been able to reach at the time of this report.

In summary, if one considers the number of students who returned medical evaluation forms as well as those who reported having received a medical evaluation without returning the form, over 75 per cent of those referred actually received medical attention for their hearing loss.

The high percentage of the follow-up medical examination was considered to be due to the good working relationships between the Project team, the

school, and medical personnel in each area. The support and active involvement in the diagnostic clinics by the chairman and members of the Hearing Conservation Committee of the Kansas Medical Society, was a vital part of this effort.

Project Evaluation and Continuation

Referral of children to their family physician for health care is a basic concern of the Division of Maternal and Child Health of the State Department of Health. The program strengthens the idea that when parents understand the significance of various conditions, especially those which affect the child's school achievement, they are motivated to seek such medical care. The community education aspect of the Project offers further evidence of its long-range benefits in this concept of family responsibility.

The response of communities for providing future local hearing screening programs is a key issue. The dramatic findings of the testing have brought numerous requests for consultation in devising testing programs for school districts which will be operated and funded at the local level. Since the mobile unit of the Project has provided the demonstration facility, its future use will be in the work that the hearing conservation team will perform as consultants in community activity.

During the first year of operation many physicians were visited in their offices or in county medical society meetings to discuss the Hearing Conservation Project as a demonstration of preventive health care. Many constructive comments and suggestions were obtained from these meetings. The advice and guidance of the medical specialists in all areas will assure continuing interest in the Project's performance as a cooperative effort in preventive medicine.

SPECIAL NOTE—On July 1, 1967, this program began the last year of operation as a special Project. A detailed report and analysis of the five-year findings will be published at its completion.

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To be alive at all involves some risk.

—Harold Macmillan

If you wish to preserve your secret, wrap it up in frankness.—Alexander Smith

Proctosigmoidoscopy: an Evaluation—

Should It Be Continued as an Integral Part of the Routine Physical Examination?

JOSEPH A. O'GRADY, M.D.,* *Halstead*

AT LEAST ONE ARTICLE¹ in the medical literature questions whether the results of routine proctosigmoidoscopic examination justifies the discomfort caused to the patient and the expenditure of the physician's time. On the contrary, any number of articles can be found which extol the benefits to be derived from the procedure.²⁻¹¹ The author, as one of his ancillary duties at the Hertzler Clinic, has done approximately 200 examinations before finding one adenomatous polyp, so he naturally tends to agree with the minority opinion. One hesitates to fly into the face of conventional medical thinking, however, without first evaluating his position. Accordingly, it was decided to review the neoplasia yield at the Hertzler Clinic and the Halstead Hospital as revealed by proctosigmoidoscopy during the period from September, 1959 through September, 1965 by determining the incidence of adenomatous polyp, villous adenoma and carcinoma. During this period 14,298 proctosigmoidoscopies were done.

Here the proctosigmoidoscopic examination is considered a routine procedure; that is, it is done on most of the patients who are examined unless there is specific contraindication. The latter would include acute myocardial infarction, acute surgical emergencies, minor procedures—e.g. tonsillectomy, extreme debility, and, of course, refusal of the patient to submit to it. This reason is actually one of the rarer causes for its omission, since the majority of the patients request to "go through the clinic," and the procedure is more or less expected by them. The examination is considered a part of the medical work-up and is popularly known among the patients as "going over the barrel," a reference no doubt to the use of a Buie type table.

The examination is performed by one of four members of the department of internal medicine as a preliminary examination preceding the barium enema. Only one of the examiners is the gastroenterologist; however, considering the volume of examinations done it must be conceded that all are experienced in the procedure. The gastroenterologist does it on the days of expected heaviest load; the rest of us

fill in. The experience of the non-gastroenterologists can be judged by the author's figure of approximately 500 proctosigmoidoscopies annually.

Preparation consists of a cathartic on the evening before the examination (usually 45 ml. of castor oil) and enemas until clear on the following morning. This preparation sometimes causes considerable spasm of the rectum and sigmoid colon; but with patience

Proctosigmoidoscopy as a routine procedure is evaluated by reviewing the results of 14,298 examinations and determining the yield of neoplasia. There was no selection of material and subjects were of both sexes, all ages, and both symptomatic and asymptomatic. The number of new growths discovered and expressed as a percentage of the number of proctosigmoidoscopies done was: adenomatous polyp 2.5 per cent, carcinoma 0.4 per cent and villous adenoma 0.11 per cent.

The literature is reviewed and the controversy regarding the malignant potential of adenomatous polyps is acknowledged. It is concluded that despite the low yield in this study and the debate generated by the status of the adenomatous polyp, the procedure should continue to be recommended as an integral part of the routine medical examination.

one is usually able to insert the instrument to at least the 10 cm. level, and in most subjects to the 15 cm. level. However few patients have the entire 25 cm. length of the instrument inserted. This is not considered a disservice to the patient, since a barium enema is to follow and it is assumed that the radiologist will pick up lesions in and above the sigmoid flexure of the colon. Articles in the literature^{4, 6, 8, 11, 12} indicate that adenomatous polyps are most prevalent in the distal 25 cm. of the colon and rectum, with the greatest number being found up to

* From the Department of Internal Medicine, the Hertzler Clinic, and the Halstead Hospital, Halstead, Kansas.

the 15 cm. level. If pathology is found it is biopsied or removed at a subsequent procedure and not preceding the barium enema. The result of the search for neoplasia expressed as a percentage of proctosigmoidoscopic examinations performed is seen in *Table 1*. It indicates a yield of 2.9 per cent. At first glance this is a rather disappointing figure, especially when one is not particularly enchanted with the procedure anyway. Furthermore, when comparison is made with other published data (*see Table 2*) which give an incidence from 2 to 19 per cent, one cannot help feeling that the present yield is quite low. A careful perusal of other articles, however, particularly those reporting a higher incidence of adenomatous polyps reveals that there is an element of selection not present in the present series. For instance, some of the articles are selective as to age;^{1, 3-5} others are selective as regards sex;¹¹ some originate from Cancer Detection Centers^{3-5, 8, 10} where one might expect that the incidence of pathology would be higher; others base their results on the number of patients examined rather than on the number of procedures done and include multiple examinations on the same patients.^{2, 4, 11} It may also be of significance that the incidence of pathological verification in some of the reported series is quite low.^{4, 11} In the present series it is 48.6 per cent. Lastly, some reports include both sigmoidoscopic and x-ray discovery in the over-all yield.⁴⁻⁷ These statements are not made in criticism of the findings of others but merely to point out that erroneous conclusions can be drawn when one searches the literature in a cursory manner.

Since the yield of adenomatous polyps in the present series is only 2.5 per cent, it was thought that if the literature would support our findings of an incidence of 0.4 per cent carcinoma and 0.11 per cent villous adenoma it would lend more credence to this admittedly low figure. In this endeavor the same problems which plagued the polyp study were encountered although there was less latitude in which divergence could develop. When results are converted to incidence as a percentage of the total yield and also to incidence as a result of proctosigmoidoscopic examination it is found that the reported incidence

in this paper is actually greater than that of most of the other series, although the difference is not considered significant. Possibly because of its rarity, comparative series on villous adenoma are more difficult to find; in the literature available to us no striking deviance was found. Comparative results are presented in *Table 1*. A reason for the slightly higher incidence of carcinoma in this series may be that our figures include the symptomatic as well as the asymptomatic cases. Only 15 (26.5 per cent) of the 57 patients with a final diagnosis of carcinoma had no symptoms referable to the rectum or large bowel.

If it is accepted that the incidence of carcinoma and villous adenoma reported in this paper is similar to that generally reported in the literature, it follows that the reported incidence of adenomatous polyps for non-selected patients is probably valid. When this is supported by reported incidences in similar non-selected groups such as Wilson, Dale and Brines⁸ who report 2.8 per cent and Crumpacker and Baker¹¹ who report 2.9 per cent it would appear that the reported figure of 2.5 per cent for our group is a true reflection of the prevalence of the adenomatous polyp as revealed by proctosigmoidoscopic examination. Comparison with the latter group may be criticized on the basis that selection is a factor since the subjects were all male and it is recognized that the incidence of adenomatous polyp is higher in the male than in the female.^{3, 8, 16}

Having established our figures as probably valid, does the reported incidence of 2.5 per cent justify the continuation of proctosigmoidoscopy as an essential part of the routine physical examination? Ironically enough the article which prompted this investigation has been followed by another from the same institution which suggests that there is a sequential development of villous adenoma and carcinoma from the adenomatous polyp.¹² Referral to the literature again reveals a difference of opinion.^{15, 17} Some authors state that the adenomatous polyp is essentially a benign lesion without metastasizing potential even when adenocarcinoma is present,^{6, 7, 13, 14, 18-20} while others feel that the polyp is a precursor of carcinoma.^{3, 5, 8, 12, 16, 21} In defense of

TABLE 1
RESULTS OF 14,298 PROCTOSIGMOIDOSCOPIC EXAMINATIONS ON UNSELECTED PATIENTS
AT THE HERTZLER CLINIC

No. of Exam.	Yield		Adenomatous Polyps			Villous Adenoma			Carcinoma			Biopsy
	TUMORS	PER CENT	NO.	YIELD	PROCTOS	NO.	YIELD	PROCTOS	NO.	TUMORS	PROCTOS	PER CENT
14,298	429	2.9	356	8.3	2.5	16	3.7	0.11	57	13.2	0.4	48.6

TABLE 2
COMPARISON OF VARIOUS SERIES FOR 3 CLASSES OF NEOPLASIA FOUND ON
PROCTOSIGMOIDOSCOPIC EXAMINATION

Author	No. of Procedures	No. of Patients	YIELD	Adenomatous Polyp		Villous Adenoma		Carcinoma		Selection
				AS RE- PORTED	PER CENT PROCTOS	PER CENT YIELD	PER CENT PROCTOS	PER CENT YIELD	PER CENT PROCTOS	
Mortel <i>et al.</i> ¹	1,020	1,020	7.5	7.5	7.5	3.4	0.2	0.1	0.1	40 yr.
Knoernschild ²	21,564	18,120	7.27	6.15	5.2			11.0	0.7	21 yr.
Miller <i>et al.</i> ³	7,494	7,494			6.2			5.0	0.3	
Enquist ⁴		7,608	19.2			0.6	0.04	2.8	0.15	45 + - x-ray
Hertzler Clinic* . . .	14,298		2.9	2.5	2.5	3.7	0.11	13.2	0.4	None
Hertz ⁵	47,091	26,126						0.22	0.12	Asymptomatic + x-rays
Rider <i>et al.</i> ⁶	7,487			5.4	4.9			10.7	0.57	+ x-rays
Portes & M ¹⁰	50,000	50,000	7.9	7.2	7.2				0.035	Asymptomatic
Wilson ⁸	20,847			2.8				4.5	0.14	Asymptomatic
Crumpacker ¹¹	14,921	5,178			2.9			9.1	0.13	Males

* Present study.

those who regard the polyp as essentially benign, it must be noted that none of them advocate ignoring it altogether. The argument seems to revolve around the method of treatment, the consensus being that the simple excision of the polyp with fulguration of the base is adequate treatment regardless of the pathological report, unless invasive carcinoma is present. When one considers that the only alternative in some instances is abdominoperineal resection it is not difficult to understand the problem.

As seen by the internist, however, the problem is evaluation of the procedure. In the light of the low yield produced by it, as well as the divergence of opinion concerning the results, compounded by the fact that the physician may not be particularly interested in doing it, its evaluation becomes much more difficult. If one could be certain that adenomatous polyps never undergo malignant degeneration, perhaps one would be justified in concluding that proctosigmoidoscopy is a superfluous procedure, particularly in the asymptomatic patient. On the other hand, as a clinician, it is most difficult to ignore discovery of adenomatous polyps which for one reason or another were not removed and yet at a subsequent proctosigmoidoscopic examination a carcinoma was found at the location previously indicated as the site of the polyp. Unfortunately this occurred twice in the present report. In one instance the carcinoma was discovered four years after the polyp had been reported and biopsied, and in the second it was found five years later. Of course, there is no certainty that the carcinoma occurred in exactly the same position, or

that it was not present when first discovered; however, the description of the carcinomas places them at the same levels at which the polyps were previously reported, unquestionably a fact with very disturbing connotations, particularly when others have reported the same experience.^{4, 5} In the light of this revelation it would appear that finding an adenomatous polyp in the rectum or colon is a very important procedure, at least from the patient's standpoint, it being assumed that finding a potentially malignant lesion is important to the patient regardless of the examiner and his statistics. Furthermore, Rider *et al.*⁷ have shown that in follow-up examinations of patients from whom adenomatous polyps have been removed the incidence of cancer is less—indirect evidence that such removal is a method of cancer prevention. Because finding and destroying an adenomatous polyp is vastly more important to the patient than to the examiner, what greater satisfaction could be afforded the internist than to seek out this potential cause of human suffering and destroy it at its inception?

At present then, it seems more prudent to remove any lesion of questionable benignancy. Until the status of the adenomatous polyp is more clearly defined, particularly its malignant potential, discovery and removal is as important to the welfare of the patient as is the interdiction of smoking in cardiovascular and pulmonary disease, or adherence to a low fat diet because of hypercholesterolemia. This concept does not consider the villous adenoma or the carcinoma itself, the discovery and elimination of which precipitates no controversy. Based on these considerations

then, it is concluded that discovery, biopsy or removal of new growths by the proctosigmoidoscopic route should continue to be recommended as an integral part of the routine physical examination.

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ELEVENTH ANNUAL FELLOWSHIP PROGRAM ANNOUNCED BY WYETH LABORATORIES

Applications for two-year Wyeth Pediatric Fellowships are available now for residencies commencing July 1, 1968. All applications must be in the hands of the Selection Committee of the American Academy of Pediatrics, 120 Erdenheim Road, Philadelphia, Pennsylvania 19118, by December 1, 1967.

Sponsored by the Wyeth Fund for Postgraduate Medical Education, each of these fellowships provides \$4,800 over two years toward the advanced training required for board certification in pediatrics. Wyeth's monthly payments, made directly to recipients, are in addition to the usual stipends paid to residents by the institutions in which they train.

Eligible to apply are interns, physicians who have recently completed an internship, research Fellows, or physicians completing their tour of duty with the Armed Services or the U. S. Public Health Service. Applicants must be citizens of the United States or Canada. Those who have already started Pediatric Residency training are not eligible. Each Fellow may choose the hospital in which he will train provided that it is accredited by the Residency Review Committee which represents the American Board of Pediatrics, the American Academy of Pediatrics, and the Council of Medical Education and Hospitals of the American Medical Association.

A voluntary committee of distinguished pediatricians has the responsibility of choosing the Pediatric Fellows. The committee considers the following factors: evidence of good character, academic achievement, performance of duties, and need for financial assistance. Wyeth plays no part in the selection of recipients. Wyeth Laboratories inaugurated this Fellowship program in 1958 to encourage interns and other young physicians who want to specialize in pediatrics, who have proven abilities, but who would find it difficult to finance the required postgraduate training.

Temporal Arteritis

Reversible Ophthalmodynamometry in Temporal Arteritis

J. H. MORRIS, M.D.* and W. B. SMITH, M.D.,† Independence, Missouri

Blindness from occlusion of the ophthalmic artery is the most serious complication of temporal arteritis. The authors suggest the use of ophthalmodynamometry in determining the activity of the arteritis in the ophthalmic artery. This method of measurement was used in the case reported here.

TEMPORAL ARTERITIS is a large artery vasculitis.¹ The most serious complication of temporal arteritis is blindness from occlusion of the ophthalmic artery.¹ Arterial pressure in the ophthalmic artery can be measured by an ophthalmodynamometer.² This simple method of measurement has been used to evaluate carotid artery insufficiency from atherosclerosis and external compression. As this case illustrates, it can also be useful in temporal arteritis.

Case Report

A 66-year-old white woman was hospitalized in February, 1964, for evaluation of nocturnal burning pain in the temples, facial soreness, painful movement of the jaw and transient episodes of blurred vision of six weeks' duration.

Physical examination revealed a tender, dilated, pulseless right temporal artery and swelling of the right temporal mandibular joint. The fundi, visual acuity, and carotid artery pulsations were normal. The rest of the examination was normal.

Significant laboratory studies were: sedimentation rate 120 mm/hr (Westergren method), WBC 12,500 with a normal differential, hemoglobin 10 gms and a diabetic glucose tolerance curve.

When the diagnosis of temporal arteritis seemed clinically established, the patient was given prednisone. Her headache and other symptoms subsided. Biopsy of the right temporal artery several days later demonstrated the typical findings of giant cell arteritis.

* J. H. Morris, M.D., Assistant Clinical Professor, University of Kansas Medical Center, Kansas City, Kansas.

† W. B. Smith, M.D., Instructor of Ophthalmology, University of Kansas Medical Center.

Prednisone was decreased over nine months and discontinued in November, 1964. Within six weeks, the patient developed anorexia, nausea, myalgia, depression and visual blurring in the right eye. Physical examination revealed a loud bruit over the right carotid artery. Sedimentation rate was 64 mm/hr. Prednisone was restarted and again gave dramatic relief of symptoms.

During this illness, several ophthalmodynamometer readings were taken. These are shown in Table 1.

TABLE 1					
Date	Sed. Rate* (mm/hr.)	Ophthalmodynamometry†		Prednisone DAILY DOSE	
		RIGHT	LEFT		
2-2-64	120	< 5	< 5	Before Rx	
3-9-64	40	38	34	30 mg	
8-12-66 . . .	52	5	35	5 mg	
9-28-66 . . .	25	30	35	10 mg	
3-14-66 . . .	35	30	35	7.5 mg	

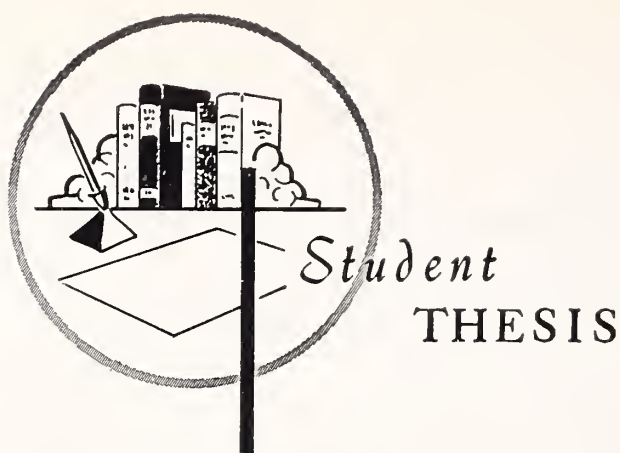
* = Westergren 2-2-64—Wintrobe Remainder
† = Diastolic reading with patient seated using a Baillart Instrument. Normals: 25-40 mm⁴

Comment

The interesting observation in this case is the reversibility of the ophthalmodynamometry readings with remission of the arteritis. Extremely low readings indicating severe ophthalmic artery insufficiency were observed before treatment. After one week of prednisone, the low readings had become normal. A similar change from a low to normal reading was noted in the fall of 1966 when the daily dose of prednisone was increased only 5 mg. As these readings became normal the sedimentation rates decreased.

In this patient, prednisone gave dramatic relief of all symptoms. Because of the high incidence of blindness in untreated cases, adrenal corticosteroids should be given when the diagnosis is clinically apparent.³ Since steroids do not alter the pathologic picture,

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Precipitating Factors in Congestive Heart Failure

SCOTT L. CARDER, M.D.,* *Glendale, California*

Introduction

THE MANAGEMENT and rehabilitation of patients with heart failure has been discussed in an excellent manner in several recent articles. However, little information is given by any of them concerning the role precipitating factors play in initiating heart failure. In fact, a symposium on congestive heart failure presented in the journal of *Circulation* in 1960 did not discuss the role of precipitating events.

Congestive heart failure as used in this discussion is defined as that clinical state resulting from inability of the heart to expel sufficient blood to meet the metabolic demands of the body. Heart failure does not occur while there is adequate cardiac reserve but as this decreases there develops a borderline area where the patient may go into failure if stress is put upon a diseased and fatigued heart. Such state is eventually seen in 50 to 60 per cent of all patients with organic cardiovascular disease. One of the most common underlying etiologic processes whose incidence increases greatly with age is arteriosclerotic coronary artery disease.

As with many diseases, congestive failure is best treated before it occurs. It would be of interest to know the most common strenuous events immediately preceding the onset of the heart failure. Properly identified, analyzed, and documented, they might then be considered with some validity as precipitating factors to be avoided.

The usual assumption concerning heart failure has

been that preventive measures are essentially the same as the treatment but are applied with less vigor. In this regard, Kay has stated that in acute problems such as a myocardial infarction, it is wiser to restrict salt from the beginning and to apply further measures at the first sign of fluid accumulation rather than to withhold treatment until fulminant manifestations of failure have appeared. Also in chronic problems there is good reason to believe that failure begets failure and that after an initial episode of decompensation the heart may never regain the same functional capacity.

Any stimulus such as exercise or excitement which increases the cardiac output in the normal heart may decrease the output in a fatigued heart. The usual course in the natural history of slowly progressive heart failure is for congestion and edema to occur during occasions when the cardiac output is above the resting level but below the necessary level to meet the metabolic demands. Patients with borderline cardiac reserve often develop edema during the day while they are active. During sleep the cardiac output falls from this below normal exercising level to a normal value for resting. The cardiac output is now sufficient for these lowered demands and diuresis occurs. It seems logical that an acute excessive metabolic demand might precipitate decompensation in borderline patients.

If there are a significant number of cases where primary or contributing events precipitate the congestive failure then it could be assumed that efforts to prevent these factors could decrease the incidence of heart failure. It would also seem reasonable that many of the items listed in management and rehabilitation of an aged patient with heart failure could be used to alter our present preventive mea-

* This is one of a group of theses written by fourth year students at the University of Kansas School of Medicine, selected for publication by the Editorial Board from a group judged to be the best by the faculty at the school. Dr. Carder recently completed his internship at Memorial Hospital, Long Beach, California. He is now located in Glendale, California.

tures. This would be especially true in those patients with known arteriosclerotic heart disease. Such things as vigorous treatment of minor illnesses, careful management of diet and exercise as well as prophylactic medication might prove helpful in long term management of these patients.

It is the purpose of this paper to determine and identify pertinent precipitating events. If such events occur in a significant number of cases then the relationship between these events and the heart failure becomes more meaningful.

Materials and Methods

To achieve a more valid result from this report, the cases of congestive failure studied were confined to a group of patients in which arteriosclerotic heart disease was felt to be the underlying etiologic process. In defining the criteria used for this diagnosis it would be ideal to include only those patients with definite electrocardiographic changes or post-mortem pathologic evidence of this disease. However, because few EKG readers ever give definite diagnoses and because most patients admitted with heart failure secondary to arteriosclerotic heart disease fortunately do recover and do not come to a post-mortem examination, we found it necessary to include three groups of patients. Those who had: (1) probable EKG changes or pathologic evidence; (2) a clinical diagnosis of ASHD in addition to EKG changes suggesting pathology consistent with this disease and; (3) those patients with a clinical diagnosis of ASHD only. The percentage of cases in each group is listed in *Table 1*.

TABLE 1 EVIDENCE OF ARTERIOSCLEROTIC HEART DISEASE		
Type	Retrospective Group PER CENT	Prospective Group PER CENT
Probable EKG and/or pathologic evidence	68	73
Clinical diagnosis and suggestive EKG changes . .	10	7
Clinical diagnosis only	22	20

Criteria for the clinical diagnosis of this disease varies. Often it rests solely upon age of the patient and lack of evidence of other diseases. This is a valid criticism, but fortunately in about 80 per cent of our patients we did not use this alone. We feel this makes our data more reliable. The large percentage of our patients had other items of the disease.

Also three cases originally included were not used in this study; we felt the clinical diagnosis was not supported by the physical findings.

One hundred cases were studied retrospectively by reviewing charts of discharged patients who were diagnosed as having congestive heart failure secondary to arteriosclerotic heart disease. Because of the limited information available by this method, a smaller group of patients were seen personally. These patients were currently in the hospital with this diagnosis.

Since several factors were present in each case, we listed separately those cases in which there was good evidence that one factor was primarily responsible for precipitating the failure. We then listed the contributing factors that were found to have a temporal association with the onset of the illness and were felt to be related to precipitating the heart failure. By combining both types of cases we see the percentage of times in which a particular factor was associated with failure. Cases in the retrospective study cover admissions from 1951 to 1964. They were from both the surgical and medical services at the University of Kansas Medical Center (KUMC). Eleven of the patients in the prospective study were from the general medical wards at KUMC and four were from the Kansas City Veterans Hospital (KCVH). Many of our patients had previous episodes of heart failure but all were compensated prior to the admission that we studied.

Results

In the retrospective study 22 cases out of 100 did not have sufficient evidence to show that precipitating factors were involved in the onset of heart failure. However, in 78 per cent of the cases there was evidence to suggest that precipitating factors did initiate the failure. Many of the factors present in this latter group were also present in the former 22 cases but there was not a clear association with the onset of decompensation.

In the prospective study similar results were seen. It was found that in 12 patients, or 80 per cent of the cases, there was a primary precipitating factor associated with the failure. Also in the other three patients several contributing causes could be found which seemed to accompany its onset.

The incidence of the various factors can be found in *Tables 2* and *3*. In both groups of patients, a respiratory infection was by far the most common precipitating event and was involved in 37 per cent of the cases in the retrospective study and 53 per cent of the cases in the prospective study. It was the sole or primary factor involved in 20 to 25 per cent of the cases in both groups.

TABLE 2			
INCIDENCE OF PRECIPITATING FACTORS IN THE RETROSPECTIVE STUDY			
Precipitating Factor	Sole Cause	Contributing Cause	Combined Incidence PER CENT
Respiratory infection	24	13	37
Digitalis intoxication	7	4	11
Inadequate digitalis .	5	5	10
Atrial fibrillation ...	2	8	10
Overexertion	2	5	7
Recent myocardial infarction	2	2	4
Anemia	1	3	4
Excess salt intake ...	0	4	4
Emotional stress	1	2	3
Other factors*	7	16	23

* Other factors include: cancer—3 per cent; physical trauma—3 per cent; pulmonary emboli; hypervolemia; uremia; operative stress; infections other than respiratory; atrial flutter; hypovolemia; paroxysmal tachycardia; and ventricular aneurysm.

EXAMPLE CASE: J.R. (49-16476) was an 81-year-old white female who entered the hospital with a chief complaint of "shortness of breath and swelling of ankles." She has been followed for ten years in the clinic prior to this admission and has had intermittent episodes of pedal edema. Two years before the present hospitalization she was started on digitalis and did well until three weeks before admission when she developed a "cold" with fever, rhinitis and coryza. She subsequently developed a cough productive of brown sputum. This was treated with penicillin and while the cough improved the patient remained short of breath. She then gradually increased in weight and developed pedal edema.

Mismanagement or misuse of digitalis was responsible for 20 per cent of the hospitalizations in both groups. They were about equally divided between intoxication and inadequate digitalis. The latter factor was considered to be involved if within two months before the onset of the heart failure there was evidence that the medication had been taken or given irregularly or if the maintenance dose had been decreased.

EXAMPLE CASE: J.L. (61-1551) was a 74-year-old white female who entered with a chief complaint of shortness of breath. One year prior to admission the patient was hospitalized here for dyspnea and pedal edema. She was discharged on maintenance digitalis and diagnosed as having ASHD with chronic atrial fibrillation and congestive failure. She was active and well until five months before the present admission when she felt so good that she discontinued her digitalis on her own.

TABLE 3			
INCIDENCE OF PRECIPITATING FACTORS IN THE PROSPECTIVE STUDY			
Precipitating Factor	Sole Cause	Contributing Cause	Combined Incidence PER CENT
Respiratory infection	3	5	53
Overexertion	1	5	40
Emotional anxiety ...	1	2	20
Recent myocardial infarction	1	1	13
Inadequate digitalis .	2	0	13
Anemia	2	0	13
Digitalis intoxication	0	1	7
Excess salt intake ...	0	1	7
Atrial fibrillation ...	1	0	7
Other factors*	0	4	26

* Other factors include: occult carcinoma; infections other than respiratory; pulmonary emboli; and surgical stress.

Within a few weeks she began to gain weight, developed pedal edema and became dyspneic. She didn't begin to take any medications again and her symptoms progressed until at the time of admission she had extreme dyspnea, 4+ pedal edema and had gained 72 pounds in the five months.

Overexertion and emotional anxiety were found to be involved in more cases in the prospective than in the retrospective study. In 40 per cent of the cases in the prospective study there was good evidence to show that the patient had overexerted himself just prior to the onset of the failure. However only seven per cent of the cases in the retrospective study gave a history of overexertion just before their decompensation. Overexertion was usually in the form of taking a trip, going on a strenuous shopping excursion or doing some heavy work. An example of anxiety precipitating an episode of heart failure will best illustrate the involvement of this factor. It was present in 20 per cent of the cases in the prospective group but in only three per cent of those studied in the retrospective group.

EXAMPLE CASE: R.U. (0-22246) was a 69-year-old veteran who was admitted to the KCVH in August, 1965, because of dyspnea, pedal edema and chest pain. He had an episode of congestive failure about four months prior to the present admission. Subsequently he had been in and out of the Wadsworth V.A. hospital. About three weeks before admission to KCVH his wife died. He was discharged from Wadsworth two weeks after this and was home for eight days. While at home he was very anxious and emotionally upset about being without his wife. He did no strenuous exercise, had

no respiratory infection, and continued to take his digitalis and follow his low salt diet. However on the night before admission he had been up until 4 a.m. grieving about his wife and worrying about sleeping in the bed in which she died. It was at this time that he began to note his shortness of breath and chest pain.

Several other significant factors were found to be associated with the onset of congestive failure. Anemia, atrial fibrillation, recent myocardial infarction, and excess salt intake were some of the factors that occurred more frequently.

It can be seen in *Table 4* that the sex incidence and mean age is similar in both groups of patients.

TABLE 4
AGE AND SEX OF PATIENTS

Group	Age in Years			Sex	
	AVERAGE	FEMALE	MALE	MALE Per Cent	FEMALE Per Cent
Retrospective	69.5	70.8	68.5	55	45
Prospective	70.3	75.9	65.5	53	47

The ratio of males to females is almost equal and the mean age is about 70 years. It is also interesting to note the incidence of symptoms with which the patients presented. These are shown in *Table 5*. In 70 to 80 per cent of the cases "shortness of breath" was the sole complaint or part of the chief complaint. In the prospective study, all the patients whose failure was precipitated by a respiratory infection listed this as their primary problem. In the retrospective study, 33 out of 37, or 99 per cent, of the patients with a respiratory infection listed this. The incidence of mortality in the retrospective study was 22 per cent. These were patients who died while in the hospital during the episode of heart failure studied. No data was gathered on patients in the prospective group in this regard.

Comment

The evidence from this study indicates that stressful events do precipitate congestive heart failure in patients predisposed by underlying arteriosclerotic heart disease. Most of these patients had borderline cardiac reserve and many previously had one or more episodes of heart failure and were apparently compensated. The results of both studies suggest that in about 80 per cent of the cases there is a precipitating factor which initiates the decompensation.

A respiratory infection was the factor which most commonly preceded the heart failure. This was present in 30 to 50 per cent of the cases. This reaffirms the general belief that a respiratory infection in an

TABLE 5
CHIEF COMPLAINTS

(Sole complaint or part of chief complaint)

Complaint	Retrospective Group PER CENT	Prospective Group PER CENT
1. Shortness of breath and/or dyspnea on exertion	72	80
2. Pedal edema	27	35
3. Chest pain	14	26
4. Abdominal pain	5	—
5. Nausea and vomiting	4	—

aged or "cardiac" patient should be vigorously treated. It might also prove of value in patients predisposed to these infections, to use prophylactic long term antibiotic as well as "flu" shots and other means of preventing respiratory infections.

Incorrect use of digitalis seemed to be a significant factor in initiating episodes of heart failure. Both the doctor and the patient contributed to the mistake. A better knowledge and respect for this drug might have led to a more prudent use and thus prevented several of these episodes. Also if the patient were more adequately informed and more carefully watched either with frequent office visits or by a responsible person in the home, possibly some of the episodes of failure could have been prevented.

From our study it would seem that ordinary hospital admission histories do not pick up precipitating factors concerning overexertion and emotional anxiety. This information could be particularly useful in the individual patient concerning rehabilitation and proper management once he is again compensated.

Our study also suggests that patients with arteriosclerotic heart disease, whose health becomes further jeopardized by such things as anemia, myocardial infarction, or atrial fibrillation, may be precipitated into an episode of congestive heart failure.

If a man or woman about the age of 70 should come into the office complaining of shortness of breath, pedal edema, or chest pain it would seem worth while from the evidence presented here to consider the possibility that either a respiratory infection or misuse of digitalis may have precipitated an episode of heart failure. Vigorous treatment of these predisposing factors in addition to the usual treatment of the heart failure may enhance the recovery.

Summary

Little to date is known about precipitating factors in patients with congestive heart failure. This study attempted to determine and identify precipitating

events and to see if such events occurred in a significant number of cases.

We studied 100 patients from the retrospective method and 15 patients by a prospective personal interview technique. All the patients had evidence that the underlying etiologic process was arteriosclerotic heart disease.

In 80 per cent of the cases in both groups evidence suggests that one or more precipitating factors did initiate the episode of failure.

A respiratory infection was the most common precipitating event and occurred in 37 per cent of the patients in the retrospective group and 53 per cent of those in the prospective group. Incorrect management of maintenance digitalis by either the doctor or the patient precipitated the heart failure in 20 per cent of the cases in both groups. The prospective study indicates that overexertion and emotional anxiety may also be involved in a significant number of patients.

The possible use of this information in the prevention, immediate treatment, and in the rehabilitation of a "cardiac" patient is discussed.

EDITOR'S NOTE: References may be obtained by writing the JOURNAL, 315 West 4th Street, Topeka, Kansas 66603.

Temporal Arteritis

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biopsy of the artery may be done after starting treatment.³

The sedimentation rate is commonly used to determine corticosteroid dosage and duration of therapy.³ We suggest that ophthalmodynamometry be used to determine activity of the arteritis in the ophthalmic artery, just as the sedimentation rate is used to determine activity of the arteritis systemically.

References

1. Hollenhorst, R. W.; Brown, J. R.; Wagener, H. P. and Shick, R. M.: Neurologic aspects of temporal arteritis. *Neurology* 10:490-498, May 1960.
2. Hollenhorst, R. W.: Ophthalmodynamometry and intracranial vascular disease. *Med. Clin. N. Am.* 42, 4:951-957, July 1958.
3. Birkhead, N. C.; Wagener, H. P. and Shick, R. M.: Treatment of temporal arteritis with adrenal corticosteroids. *JAMA* 163:821-827, Mar. 9, 1957.
4. Hollenhorst, R. W.: The ocular manifestations of internal carotid arterial thrombosis. *Med. Clin. N. Am.* 44, 4:897-908, July 1960.

FITNESS AT 40-PLUS

Many men over 40 fight their own physical fitness, says *Today's Health*, the family magazine of the American Medical Association.

These are individuals who assume that because of their age they are no longer capable of much physical effort. One of the greatest dangers to men past 40, says *Today's Health*, is falling into sedentary ways, either because of job confinement or sheer laziness.

The male past 40 is advised to do two things with regard to physical exercise—

- If he is not reasonably adept at a specific sport—bowling, golf, tennis, or swimming—he should take instruction in at least one of these or some other form of physical recreation.

- He should take an inventory of his physical activity in the course of his regular daily schedule. This includes physical activity on the job and at home. It might include such chores as gardening and maintaining the home, sports activity and what he is doing in the way of regular calisthenic exercises. Often these do not provide enough activity.

For the sedentary person who decides to become active, a good starting point is walking. This means a brisk posture walk, holding the belt line level and raising the breastbone. Then in addition to regular physical activities start devoting part of the weekend to a pleasant physical activity like golf, bowling, dancing or swimming—something that is really enjoyable.

Fifteen minutes of regular exercise every other day is hardly enough to produce noticeable results quickly, but it is a good start. Over a period of time, nevertheless, its benefits will be evident.

With regular physical exercise, the sagging, dragging middle-ager will begin to exhibit a total change in his attitude. He enjoys his meals more and shows more interest in his home. Even his physical appearance is more vital.

For the man past 40 who decides to begin an exercise program, a visit to the physician for a physical examination is advisable, to make certain there are no conditions that would limit exertion.—*AMA Health and Safety Tips*

Fifty-two thousand and five hundred persons were killed and 4,400,000 injured in traffic accidents last year according to a report from The Travelers Insurance Companies. The survey showed that alcohol was a contributing factor in more than half of all fatal accidents.

The President's Message

DEAR DOCTOR:

Comprehensive Health Planning is a term you will hear often in the future. Organized medicine has long endorsed the concept of voluntary planning on a state and areawide basis. It has supported the Kerr-Mills bill which plans for the development of hospital expansions on a logical basis. Congress, in 1966, passed Public Law 89-749, the "Comprehensive Health Planning and Public Service Amendments." This law in effect enlarges and extends the Kerr-Mills concept into every corner of the health care field.

As one of its provisions, the state governors are directed to appoint a single state agency to direct the program. Our Governor designated the State Board of Health as the agency in Kansas. The Governor must appoint also an Advisory Council to oversee the agency.

Our state legislative council contracted with a nationally known consulting firm to make an extensive survey of the present status of all aspects of health and to develop recommendations for the future. Their report will cover almost every conceivable field even remotely related to the health of our citizens.

Since the law is so far reaching and its language indefinite and ambiguous, it seems to me imperative that in Kansas at least we establish a clear concept of "Public Health." We must clearly distinguish between health and welfare. We must define the limits of public health and private health, to avoid controversy and confusion in the changing health care field.

Sincerely,

A handwritten signature in dark ink, appearing to read "Leo H. Sell". The signature is fluid and cursive, with a large initial "L" and "S".

President





Editorial COMMENT

Physicians, Hospitals, Population and Per Capita Income

The American Medical Association recently completed a two-volume, 600 page, set of statistical tables on physicians, hospitals, population and per capita income. It is a formidable compilation worthy of serious study. A few of the most immediately apparent items are reported here in the hope that they may be of possible interest and value.

There were 300,375 physicians in the United States and four territories as of December 31, 1966. After removing 13,212 listed as inactive; 1,306 of unknown address, and 2,165 temporarily out of the country, the total is 285,857. Federal services employ 26,178, from which total the armed forces have 16,112; the Veterans Administration, 7,152; and the Public Health Service, 3,384.

Non-federal physicians who were practicing in this country as of December 31, 1966, numbered 272,891. There were 9,556 interns; 31,153 residents; 10,503 medical school faculty; 2,622 medical administrators, and 3,221 engaged in research.

Specialty totals, to list only a few, are as follows: general practice, 66,516; internal medicine, 35,027; pediatrics, 15,317; general surgery, 25,987; obstetrics and gynecology, 16,386; ophthalmology, 8,229; orthopedic surgery, 7,174; anesthesia, 8,587; pathology, 16,914, and radiology, 9,132.

These volumes then break such figures down into regions, states, counties and finally into 300 selected metropolitan areas. In this list Hutchinson, Kansas City, Salina, Topeka, and Wichita represent Kansas.

Physician population by states presents other interesting figures. New York, with 39,242 physicians, has the greatest number; second is California with 33,165. The state with the fewest doctors is Alaska with 170. Of course, the four territories also included in the statistics have still fewer.

Kansas is listed as having 2,455 physicians; 9,763 hospital beds, and a population of 2,270,700. There are 22 states and four territories that have fewer physicians than Kansas. However, when populations and hospital beds are compared a few exceptions occur. For example, Colorado has more physicians (3,284), fewer hospital beds, and a lower population. Connecticut has a far greater physician population (5,223), but fewer hospital beds, and only a slightly larger population. At least three states have fewer doctors, not as many hospital beds, but a greater population. Only one state, Oregon, has a larger physician population (2,716), more hospital beds (9,776), and a smaller population.

Included also is information relating to income. The national average per capita income in 1965 was \$2,367. The per household average income was \$7,990. Kansas' per capita income was \$2,165; per household income, \$6,969—slightly below the national average. These figures are given for every county in each of the states. There is a remarkable variation. At least 80 counties have a per capita income of under \$1,000. The lowest quickly apparent was \$460. At the other extreme, 45 counties have a per household income of more than \$10,000. Johnson County, Kansas, with a per household income of \$12,107, is the only Kansas county in the over-\$10,000 group. The highest per household average income in the United States, as listed in this document, is Chattahoochee County, Georgia, with \$21,080.

In this mass of material there is, of course, much more data available. We are advised the publication was issued in limited quantity, but presume it would be available through the AMA should anyone have further interest and desire to obtain a copy.

KaMPAC Workshop

What is the value of a dollar? This question, simple as it is, has many ramifications. It depends upon what one wishes to do with the dollar. Do we wish to purchase an item? Maybe it is the first dollar earned, therefore we wish to preserve it. And, yet, we might wish to use that dollar to impress someone.

Now, how in the world could anyone be impressed by a dollar, you say. It is not just a dollar we are talking about, but a collection of dollars and the multiplication of dollars that counts. Each year we are asked to donate to many charities and organizations. We donate for many different reasons and the size of our contribution varies with our feelings about the organization. The most important thing we should remember is that because we are giving along with many others our dollar grows and grows. This is multiplication.

This takes place in the political arena as well. There are various political organizations formed for the purpose of raising money for the candidates of their choice. AMPAC-KaMPAC is just such an orga-

nization. Your contribution is joined with hundreds and thousands of others and distributed to the candidate, not in a like number of small checks, but in one sizable amount. Your dollar achieved multiplication.

Now, let us not be deceived that money buys friendship because it does not, and there is always someone ready to bid higher. It does, however, cost money to run campaigns—more and more each year. We should, as responsible citizens, be willing to shoulder some of this cost in the interest of being a good citizen.

One should feel that to be in politics is to be a good citizen. The KaMPAC Board of Directors is giving you an opportunity to learn more about good citizenship. A KaMPAC workshop is planned for November 5 in Topeka. It will be a most informative session on political and PAC activities in Kansas.

This date is exactly one year from *Election Day* 1968. Will we be ready for the challenge that day holds for us?

We will if we avail ourselves of opportunities such as the KaMPAC workshop.

BY YOUR SUPPORT, SHALL THEY KNOW YOU!

KaMPAC Workshop — Ramada Inn — Topeka, Kansas

November 5, 1967

GUEST SPEAKERS

- Honorable Larry Winn, Representative, 3rd Congressional District
- Thomas J. Corcoran and McDill "Huck" Boyd, National Committeemen of the Democratic and Republican parties
- Blair Henningsgaard, M.D., Chairman, AMPAC Board
- Lee Ann Elliott, Assistant Director, AMPAC

K.U.-K-STATE FOOTBALL GAME—SATURDAY, NOVEMBER 4

Make your ticket reservations with Mr. Swenson at the KMS office before October 10.

Annual Meeting

Kansas Academy of General Practice

MIDTOWN HOLIDAY INN OCTOBER 5-6, 1967 WICHITA, KANSAS

THURSDAY, OCTOBER 5

- 7:15 A.M. Past Presidents' Breakfast—West Banquet Room
- 8:30 A.M. Business Meeting—East Banquet Room
Sam Zweifel, M.D., President, presiding
- 12:30 P.M. Luncheon for the Doctor's Lady—Wichita Country Club
Program on Interior Design and Accessories
- 1:00 P.M. Sports Day: Golf—Spring Valley Golf Course; Skeet—Ark Valley Gun Club
- 6:30 P.M. Cocktail Hour—Safari Room
- 7:30 P.M. Dinner—West Banquet Room—for Doctors, Wives and Guests
Guest Speaker: Harold Ensley "The Fisherman's Friend"

FRIDAY, OCTOBER 6

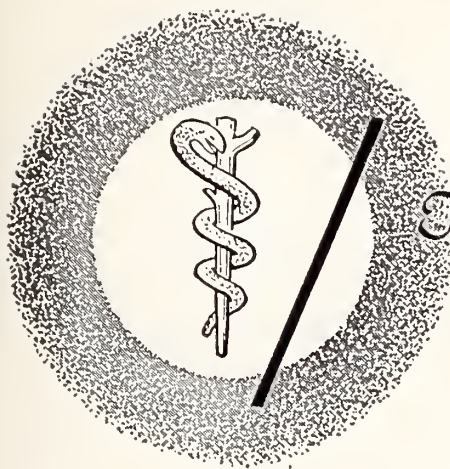
- 8:00 A.M. Registration—Main Lobby
Morning Scientific Assembly—Holiday Room
Moderator: Sam Zweifel, M.D., President
(Each speaker will have 45 minutes for his paper)
- 9:15 A.M. "Frigidity and Impotency"—Kermit E. Krantz, M.D., Kansas City
to
- 11:45 A.M. "New Facts and New Concepts in Endocrinology"—Thomas F. Frawley, M.D., St. Louis
"Inhalation Therapy"—William P. McGuire, M.D., Wichita
- 12:15 P.M. Luncheon for Doctors, Wives and Guests—West Banquet Room
Luncheon Speaker: George E. Burket, Jr., M.D., President, A.A.G.P.
Luncheon Chairman: Jack G. Phipps, M.D., Wichita
- 2:00 P.M. Round-Table Discussions
to
(Each of the three speakers, with a moderator, will rotate from room to room spending one hour with each group.)
- 5:15 P.M.
- 6:15 P.M. Cocktails—Safari Room
- 7:15 P.M. Dinner—West Banquet Room

Immediately following the dinner the new officers of the Kansas Chapter will be installed by George E. Burket, Jr., M.D., President, American Academy of General Practice.

This is family night, so bring the children and guests and treat them to an evening with, "Happiness Is."

Send Reservations in Soon!

Space for Annual Dinner Is Limited!



The Kansas Press Looks at Medicine

Editor's Note. In this section the JOURNAL reproduces editorials relating to medicine which have appeared in the lay press. An effort is made to include both favorable and unfavorable comments, and the Editorial Board in no instance assumes responsibility for the opinions expressed.

A DISHONEST CAMPAIGN

President Johnson and Social Security Commissioner Robert M. Ball unfortunately used the first anniversary of medicare to blame physicians for causing their medicare patients hardships by billing them directly.

The President hailed medicare in a statement: "All the doubts and dire predictions have vanished in the glow of its success. Millions already have benefited, and this year we hope to make medicare even stronger and better."

He then added:

"One major current problem concerns how the patient can be relieved of the hardship caused by large bills submitted by a physician who is unwilling to take payment on assignment, thereby forcing the patient to pay the physician out of his own funds before medicare can make payment."

Ball sang a similar tune in a press conference marking medicare's anniversary. In his statement he said, "We are studying whether there are ways in which the patient can be relieved of the hardship arising from his physician's refusal to take an assignment without increasing inflationary pressures on the size of physicians' fees."

Through their statements, the President and Ball seem to have joined in the dishonest campaign to imply that a physician who chooses one of the options guaranteed under the law is guilty of some kind of reprehensible act. It is not surprising that the president of the Ohio State Medical Assn. was moved to reply, "Ball will not lay the tragic weaknesses and failures of medicare at the door of Ohio's doctors."

Ohio was on a list of 10 states read by Ball as having the lowest proportions of physicians accepting as-

signments under medicare at least some of the time.

"The weaknesses and failures of medicare are created by certain ridiculous provisions of the medicare law and the way it is being administered," Robert E. Howard, M.D., OSMA president, said. "They are not created by Ohio doctors or any other doctors."

He added: "Apparently Ball is not familiar enough with the law he is charged with administering to know that Congress specifically and pointedly provided that the physician could preserve the traditional physician-patient relationship by directly billing the patient he treats. If he does not recognize this provision—and he apparently doesn't—then he is in contempt of Congress."

If the President and Ball are honestly concerned about helping medicare patients, they will join the American Medical Association in supporting in Congress amendments to the medicare law which will allow a patient to be reimbursed by the government on the basis of his physician's itemized statement of charges rather than a receipted bill. This would solve the problem of a patient having to raise money first to pay his physician before the government sends the patient a check, and it will preserve the freedom of choice of billing for physicians.

The government has made quite an appeal to physicians to cooperate in implementing medicare—a program vigorously opposed by most of the nation's M.D.'s. But cooperation works both ways. If physicians are expected to cooperate, they have a right to expect Administration officials to be honest in return, and not to be maligned for making a choice guaranteed under the law—unpopular as that choice may be with the bureaucrats.—*The AMA News*.—*Atchison Daily Globe*.



Personalities—IN KANSAS MEDICINE

Among the physicians who attended the annual general practice review at the University of Colorado Medical Center in July were **Bill Braden**, Wamego, and **H. Preston Palmer**, Scott City.

Harry R. Custer, Colby, has been appointed a member of the Advisory Council for Regional Programs in Kansas. The appointment was made by Governor Docking in July.

The appointment of **William McKnight** as clinical director of Winfield State Hospital and Training Center was announced by **Moheb Hallaba**, hospital superintendent, in August. Dr. McKnight has served as chief of acute and chronic wards at the hospital since 1965.

G. Gayle Stephens, Wichita, has been appointed director of medical outpatient services at Wesley Medical Center in Wichita. Dr. Stephens will be responsible for the development of Wesley's new family practice program, a three-year training course for interns and residents focused on the development of a program of comprehensive family care. The program, to be implemented in July 1968, will be the first in Kansas and among the first in the nation.

Alfred Scherer, Osborne, and **Bill Braden**, Wamego, have been re-elected to active membership in the American Academy of General Practice.

George E. Paine announced in June the termination of his practice in Hutchinson, where he has been associated with the Hutchinson Clinic. Dr. and Mrs.

Paine are taking an extended vacation and plans for the practice of medicine in the future are indefinite.

Dr. and Mrs. Alex Mitchell and family of Lawrence, and **Edward Long** and sons of Humbolt, spent a "busman's holiday" in Honduras, Central America, in August. Dr. Mitchell and Dr. Long participated in a project for inoculation and care of the natives. The program is sponsored by Amigos De Las Americas, a non-profit organization for medical and education missions. Their families assisted in the program. Dr. Mitchell spent six weeks in Honduras last summer, under the sponsorship of AMDOC, an organization made up of doctors and dentists.

Francis J. Nash, Kansas City, was re-elected secretary of the State Board of Healing Arts at the annual organizational meeting held in Topeka in July. **James E. Hill**, Arkansas City, was elected president. **Cyril V. Black**, Pratt, and **Woodrow M. Campion**, Liberal, are new members of the board appointed by Governor Docking.

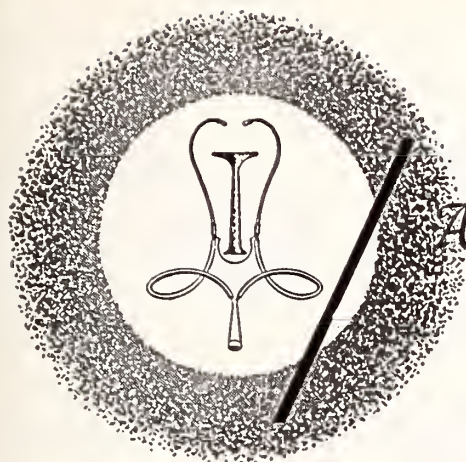
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Announcements

Professional meetings, conferences, and postgraduate courses of national importance are listed for the DOCTOR'S CALENDAR. Notice of the session is posted in advance to allow the physician time to make preparations.

A new drug, Fenclonine, which inhibits serotonin synthesis is being evaluated for its effectiveness in the therapy of the symptoms of the carcinoid syndrome. Physicians interested in having patients with malignant carcinoid considered for this therapy may write Daniel L. Azarnoff, M.D., Clinical Pharmacology Study Unit, University of Kansas Medical Center, Kansas City, Kansas 66103, or telephone collect, ADams 6-5252, Ext. 373 (area code 913).

SEPTEMBER

Sept. 21 Kansas Tuberculosis and Health Association, Hotel Lassen, Wichita.

Two sessions of medical interest will be a luncheon symposium sponsored by the Kansas Thoracic Society. Gerald Kerby, M.D., University of Kansas Medical Center, will discuss "Management of Drug Resistant Tuberculosis." At 2:15 p.m., Carl W. Tempel, M.D., Denver, will present "A Modern Program for TB Control." These sessions are open to interested physicians; no registration fee.

Sept. 21-24 American Medical Writers Association, Palmer House, Chicago. Elizabeth G. Dailey, Exec. Sec., P.O. Box 267, Arlington, Virginia 22210.

Sept. 25-27 Kansas City Southwest Clinical Society, Hotel Muehlebach, Kansas City, Missouri. For Information: Robert S. Mosser, M.D., Director of Clinics, 3036 Gillham Road, Kansas City, Missouri 64108.

OCTOBER

Oct. 4-5 Annual Midwest Interprofessional Seminar, *Diseases Common to Animals and Man*. University of Missouri, Columbia. Write: Dr. D. C. Blenden, Dept. of Veterinary Microbiology, Section of Public Health, School of Veterinary

Oct. 5

Oct. 21-26

Oct. 29-
Nov. 1

Medicine, University of Missouri, Columbia 65201.

Symposium on *Genetics and Inborn Errors of Metabolism: Their Medical and Surgical Application*, 10 a.m.-4 p.m., Ramada Inn, Salina. Guest speakers: Donough O'Brien, M.D., Professor of Pediatrics, University of Colorado Medical Center, and Edwin Ide Smith, M.D., Surgeon and Chief, Children's Mercy Hospital, Kansas City, Missouri. Sponsored by the March of Dimes and the Saline County Medical Society. Open to all physicians—no registration or fee.

American Academy of Pediatrics, Washington Hilton Hotel, Washington, D. C. Write the American Academy of Pediatrics, 1801 Hinman Avenue, Evanston, Illinois 60204.

American College of Gastroenterology, Biltmore Hotel, Los Angeles. Following the convention a three-day course in Postgraduate Gastroenterology will be held at the Biltmore. Contact the Secretary, American College of Gastroenterology, 33 W. 60th Street, New York City 10023.

NOVEMBER

Nov. 12-17

Nov. 16-19

American Association for Inhalation Therapy, Statler Hilton Hotel, Los Angeles. Write the Executive Secretary, A.A.I.T., 332 S. Michigan Avenue, Room 904, Chicago 60604.

National Society for Crippled Children and Adults, Central Plaza Hotel, Los Angeles. Write Kay Bauer, Dir. of Public Relations, 2023 W. Ogden Avenue, Chicago 60612.

(Continued on Page 388)



Along The BOOKSHELF

Clendening Medical Library

RECENT ACQUISITIONS

- Bietti, Giambattista. Trachoma: prevention and treatment. Thomas, 1967.
- Brennan, Ruth. Nutrition; a book of readings. Brown, 1967.
- Burch, George Edward. Electrocardiography in the diagnosis of congenital heart disease. Lea & Febiger, 1967.
- Caceres, Cesar A. The innocent murmur; a problem in clinical practice. Little, Brown, 1967.
- Greenson, Ralph R. The technique and practice of psychoanalysis. International Universities Press, Inc., 1967.
- Hoppenfeld, Stanley. Scoliosis; a manual of concept and treatment. Lippincott, 1967.
- Horwitz, Norman H. and Rizzoli, Hugo V. Post-operative complications in neurosurgical practice. . . . Williams & Wilkins, 1967.
- Howard, Norman. Mediastinal obstruction in lung cancer. Livingstone, 1967.
- Kennedy, John Hines. Support of the failing circulation. . . . Thomas, 1967.
- Kimura, Samuel J. and Caygill, Wayne M., eds. Vascular complications of diabetes mellitus. . . . Mosby, 1967.
- Laughlin, Henry Prather. The neuroses. Butterworths, 1967.
- Luria, Salvador Edward and Darnell, James E., Jr. General virology. Wiley, 1967.
- McGovern, John P. and Knight, James A. Allergy and human emotions. Thomas, 1967.
- McNeer, Gordon and Pack, George T. Neoplasms of the stomach. Lippincott, 1967.
- Menendez, Charles V. Ulcers of the leg. . . . Thomas, 1967.
- Montgomery, Hamilton. Dermatopathology. Harper & Row, 1967.
- Morehouse, Lawrence Englemohr and Miller, Augustus T., Jr. 5th ed. Physiology of exercise. Mosby Co., 1967.
- Mumford, Emily and Skipper, James K., Jr. Sociology in hospital care. Harper & Row, 1967.
- Novak, Emil and Woodruff, J. Donald. Novak's gynecologic and obstetric pathology. . . . 6th ed. Saunders, 1967.
- Quiring, Daniel Paul. The head, neck, and trunk; muscles and motor points. 3d ed. Lea & Febiger, 1967.
- Robertson, Edward Graeme. Pneumoencephalography. 2d ed. Thomas, 1967.
- Rogers, Carl Ransom. The therapeutic relationship and its impact. . . . University of Wisconsin Press, 1967.
- Rose, Anthony H., ed. Thermobiology. Academic Press, 1967.
- Shoemaker, William C. Shock; chemistry, physiology, and therapy. Thomas, 1967.
- Siddons, Harold and Sowton, Edgar. Cardiac pacemakers. Thomas, 1967.
- Stamler, Jeremiah. Lectures on preventive cardiology. Grune & Stratton, 1967.
- Usdin, Earl and Efron, Daniel H. Psychotropic drugs and related compounds. U. S. Govt. Print. Off., 1967.
- Whitby, Henry Augustus Morton. Bio-electronic detection of cancer and other diseases. . . . Lockwood, 1967.
- Wolberg, Lewis Robert. The technique of psychotherapy. 2d ed. Grune & Stratton, 1967.

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Book REVIEWS

DIURETIC THERAPY edited by Arthur C. De Graff, M.D., and Alan F. Lyon, M.D., 41 pages, paperback, C. V. Mosby, St. Louis, 1965. Price \$3.50.

A pamphlet rather than a book, this is a collection of nine summary-type papers originally published in the *American Heart Journal* in 1964 and 1965. As journal articles they seem quite appropriate, but the price is high for this type of publication and it lacks the substance for full-fledged book treatment. A further weakness is that the material is not strictly up to date, and, while ethacrinic acid is discussed, there is no section on furosemide.

It is a shame for collections of papers, conference proceedings and the like to be appropriated directly into book form because such material, even though beautifully adapted to its original purpose, is frequently inappropriate for a book. As a result neither the material nor the book gets fair treatment. But the trend seems to be firmly established, probably because it permits publishers to market books without costly rewriting and editing.

It is difficult to predict which physicians will want this "book," but I suspect that the audience will be small.—*J.D.R.*

A MANUAL OF TROPICAL MEDICINE, (Fourth Edition) by George W. Hunter, III, Ph.D., William W. Frye, M.D., J. Clyde Swartzwelder, Ph.D. W. B. Saunders Company, Philadelphia, 1966. 931 pages illustrated. \$18.50.

Unexpected disease today is not uncommonly one of those observed in the tropics, despite the rigid observation of air travelers going in and out of the tropics. A large segment of our armed forces rotates through tropical areas, consequently those in the

practice of medicine in the zone of the interior need current, well-organized information relative to tropical medicine. The authors of the manual have been joined by 37 well-qualified contributors in the preparation of a valuable tome in its fourth edition which is in excellent format and well bound. It is recommended to all those in the practice of diagnostic medicine and most medical libraries. This reviewer found reading of chapters one at a time acceptable; however, the reading was somewhat heavy when several sections were attempted at a sitting.

The sections were titled as follows: Virus Diseases; Rickettsial Diseases; Spirochetal Diseases; Bacterial Diseases; Mycotic Diseases; Protozoal Diseases; Helminthic Diseases; Nutritional Diseases; Miscellaneous Conditions; Medically Important Mollusks; Medically Important Arthropods; Laboratory Diagnostic Methods.—*N.V.T.*

PERIPHERAL ARTERIAL DISEASE by Wiley F. Barker. (Vol. IV in the series "Major Problems in Clinical Surgery") J. Engelbert Dunphy, M.D., Consulting Editor. W. B. Saunders Company, Philadelphia, 1966. 229 pages illustrated. \$8.50.

This is volume IV in the series "Major Problems in Clinical Surgery." The book is designed to bring the point of view of the author and the opinions of some of his more experienced colleagues into focus on common problems in the treatment of peripheral arterial occlusive disease. Particular attention has been directed to the trouble spots that are responsible for the difficulties in this sphere of surgery.

This book presents fundamental anatomy, physiology, pathology and pathogenesis, and diagnostic problems found in the area of vascular surgery.

The book is well illustrated and written so that it can be easily understood.—*W.H.Z.*

Alcoholism: A Family Affair!

Don't be shocked if you should see symptoms of alcoholism in someone you know very well—perhaps even a member of your family—for there are over five million victims of this *disease* in the U. S. . . . and 20 million innocent family members caught in this giant web of tragedy.

Alcoholism ranks among the four major public health problems in the country, along with heart disease, cancer and mental illness according to reports by the National Council on Alcoholism. But its greatest cost to the nation, as one authority points out, is in "the dulling of fine minds, the warping of lovable personalities and the breakup of families." Perhaps the most appalling of all is the price children and mates have to pay in bewilderment, humiliation and often physical neglect and abuse.

For probably no marriage with an alcoholic can be considered a happy one, according to Dr. Ruth Fox, former President of the New York City Medical Society on Alcoholism, and a practicing psychiatrist. There may be periods of relative harmony, but there is such a basic inadequacy in the one who drinks (and surprisingly enough often in the spouse, as well) and lack of faith in human beings, that the mutual trust and sharing necessary for a good relationship are absent.

What's more, the steady sense of security, love and warmth necessary for adequate development of children are so lacking in an alcoholic home, that a child has difficulty developing the trust and confidence in himself and others that he will need for successful living. Neither the alcoholic father nor the alcoholic mother can play the role of parent adequately, so there are gross failures of identification in the growing child—a condition that can warp all his future relationships.

When children become aware of the social stigma wrongly surrounding alcoholism, they feel different, estranged, isolated and ashamed, and often do not want to be seen together as a family. The child, in his helplessness, can develop fear, hatred and revenge fantasies for which he later feels guilt and fear of retaliation. This situation may produce a life-long difficulty with figures of authority.

In most alcoholic families, "home remedies" are persistently tried, despite their evident failure to control drinking. Liquor is locked up and bottles hidden. Money is withheld and charge accounts cancelled. The

family tries moving from the city to the country, or vice versa. At first the couple discuss the situation with "sweet reasonableness," later with anger and recrimination. Emotional appeals—"How can you do this to me?," "Where is your self-respect?," "Think of the children"—are as ineffectual as everything else. This is because the alcoholic, though sincere in his promises, is *unable* to stop without outside, expert help.

During this stage all is chaos. The children become involved and are bewildered. There is hostility, frustration, fighting, threats of leaving. The wife reacts to the alcoholic's violence by cringing in terror, retaliating or calling the police. There is economic anxiety, for often in this phase the alcoholic works only intermittently. The wife may fear for her sanity and the emotional effect on the children. The alcoholic himself begins to think he is "insane" since he cannot understand his actions.

But the facts show that if you are the wife, the husband or the parent of an alcoholic, the proper attitudes toward the alcoholic and your choice of the *right* course of action, can actually be essential factors in recovery, according to the National Council of Alcoholism. The following tips might be helpful if the disease strikes in your home.

1. Learn the facts about alcoholism from a reliable source, such as the National Council on Alcoholism or Alcoholics Anonymous. Go to the library, look up "Alcoholism" in the card index and in the "Readers Guide." The best way to help any alcoholic recover is to remove ignorance.
2. Avoid "home treatment methods"; these are not only futile but extremely harmful in many cases!
3. Know where to seek immediate help. Many affected people turn to Al-Anon Family Groups—whose membership is free, and which is now providing an invaluable service to the families with an alcoholic problem.
4. Try to make your home and family relationships a healthful setting for eventual recovery for your patient with alcoholism. If you have been wrong in the past in your attitudes and actions taken, don't try to justify your mistakes. Be humble enough to admit and change them.

Show love—not censure—for love is the alcoholics greatest need. It is basically because he does not know or trust or feel worthy of love that he drinks.

KANSAS STATE DEPARTMENT OF HEALTH

TOPEKA, KANSAS

Division of Preventable Diseases—Division of Vital Statistics—Kansas Morbidity Incidence
Summary of Cases Reported in May, 1967 and 1966

<i>Diseases</i>	<i>May</i>			<i>January-May, Inclusive</i>		
	<i>1967</i>	<i>1966</i>	<i>5-Year Median 1963-1967</i>	<i>1967</i>	<i>1966</i>	<i>5-Year Median 1963-1967</i>
Amebiasis	—	1	1	5	4	5
Aseptic meningitis	—	—	—	—	—	—
Brucellosis	—	2	1	—	3	2
Diphtheria	—	—	—	—	—	—
Encephalitis, prim., infect.	—	—	1	2	—	3
Encephalitis, post-infect.	—	—	*	—	—	*
Gonorrhea	360	277	219	1,625	1,165	1,170
Hepatitis, infectious	11	13	18	72	90	109
Meningococcal meningitis	4	1	1	6	7	6
Pertussis	—	3	3	3	6	8
Poliomyelitis	—	—	—	—	—	—
Rheumatic fever	—	—	—	2	—	2
Salmonellosis	12	15	15	68	77	77
Scarlet fever	2	10	4	50	75	65
Shigellosis	1	2	2	11	34	34
Streptococcal infections	146	229	123	1,428	1,367	1,367
Syphilis	95	125	95	449	477	449
Tinea capitis	3	5	5	30	25	30
Tuberculosis	28	24	28	105	133	111
Tularemia	—	—	1	7	—	4
Typhoid fever	—	—	—	—	2	—

* Statistics for 5-year median not available.

RABIES PROPHYLAXIS

The problem of whether or not to immunize persons bitten or scratched by a suspected rabid animal has been a perplexing one for physicians and for public health agencies for many years due to instances of adverse reactions to the vaccine, changing risks, and epidemiological patterns.

Status of Antirabies Treatment in U. S.

"More than 30,000 people have received post-exposure antirabies treatment each year. However, the number of persons actually exposed to rabid animals is not known. Nervous tissue vaccine of the Semple type (NTV) was used almost exclusively in the U. S. until 1957 when the duck embryo vaccine (DEV) was licensed. More than 75 per cent of those who received rabies prophylaxis in the United States in 1965 were given DEV.

"There has been remarkable variation in the rate of adverse reactions associated with NTV. In the United States, it is generally accepted that one individual among 4,000 to 8,000 persons receiving NTV

antirabies treatment develops neurologic complications. Death has been attributed to NTV in a ratio of one to every 35,000 persons treated.

Neurologic complications associated with DEV have been reported for one of every 25,000 persons treated. One possible related death has occurred among some 172,000 who have received DEV since its introduction."

Antigenicity of Vaccines

"Antigenicity of NTV is often higher than that of DEV when tested in experimental animals. However, all lots of both vaccines must pass minimum potency tests established by the Division of Biologics Standards, National Institutes of Health. There is evidence that the serum antibody response in humans is detectable earlier following DEV vaccination, but the eventual level or response is frequently higher with NTV."

Effectiveness of Vaccines in Humans

"In the United States, comparative effectiveness of vaccines can only be judged by frequencies of failure

to prevent disease. During the years 1957 through 1967 when both vaccines were available, there were 6 rabies deaths among 117,700 NTV-treated persons (1:19,600) and 7 deaths among the 172,000 treated with DEV (1:24,500)."

Reactions

"Erythema, pruritis, pain, and tenderness at the site of inoculation are common with both DEV and NTV. Systemic responses, including low-grade fever, or rarely shock, may occasionally occur late in the course of therapy with either vaccine, usually after five to eight doses. In rare instances, serious reactions have occurred after the first dose of DEV or NTV, particularly in persons previously sensitized with vaccines containing avian or rabbit brain tissue."

Choice of Vaccine

"Rates of treatment failures with the two vaccines are not significantly different; therefore, the lower frequency of central nervous system reaction with DEV makes it preferable to NTV."

Passive Immunization

"Hyperimmune serum has proved effective in preventing rabies. Its use in combination with vaccine is considered the best post-exposure prophylaxis. However, the only preparation of antirabies serum now available in the United States is of equine origin. Because horse serum induces allergic reaction in at least 20 per cent of those receiving it, its use must be limited.

"It is recommended for most exposures classified as severe, and for *all* bites by rabid animals, wild carnivores, and bats. When indicated, antirabies serum should be used regardless of the interval between exposure and treatment."—*U. S. Public Health Service Advisory Committee on Immunization Practices.*

University of Kansas:

Oct. 24-25 *Medicine and Religion*

For further information write the Department of Postgraduate Medical Education, University of Kansas School of Medicine, 39th and Rainbow Boulevard, Kansas City, Kansas 66103.

University of Nebraska:

Oct. 20-21 *Pediatric-Obstetric Neonatology Conference*

For further information write the Department for Continuing Education, University of Nebraska College of Medicine, Omaha.

Hahnemann Medical College and Hospital:

Nov. 13-14 *Current View of Congestive Heart Failure*

Nov. 17-18 *Human Sexual Function and Dysfunction*

For further information write the Department of Postgraduate Education, Hahnemann Medical College and Hospital, 230 N. Broad Street, Philadelphia 19102.

Nov. 8-11 *Treatment of Skeletal and Soft Tissue Injuries*, American Academy of Orthopaedic Surgeons, Marriott Motor Hotel, Dallas. Contact: Charles F. Gregory, M.D., University of Texas, Southwestern Medical School, 5323 Harry Hines Boulevard, Dallas 75235.

Nov. 6-17 *Laryngology and Bronchoesophagology*, sponsored by the Department of Otolaryngology, Illinois Eye and Ear Infirmary and the College of Medicine, University of Illinois. Limited to 15 physicians. Interested registrants write directly to the Department of Otolaryngology, College of Medicine, University of Illinois at the Medical Center, P.O. Box 6998, Chicago 60680.

Announcements

(Continued from Page 383)

POSTGRADUATE COURSES

University of Colorado:

Oct. 2-6 *Hospital Medical Staff Conference* (Estes Park)

Oct. 2-6 *Premature Infant Care*

For further information, write the Office of Postgraduate Medical Education, University of Colorado School of Medicine, 4200 E. Ninth Avenue, Denver 80220.

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HOW TO MAKE YOUR WIFE A WIDOW

You may be well on the road to making your wife a widow—without knowing it! If you're not yet a candidate for membership in the Coronary Club, you can become one soon by assuming the role of one of the following short-lived characters:

1. *The Workhorse.* This part is a snap; all you have to do is try to get to the top in the shortest possible time and put your job ahead of all personal considerations. Go to the office evenings, Saturdays, Sundays and holidays. Or, at least take your brief case home; it's a good opportunity to review all the worries of your working day. It's also wise to stay up late working every night, because too much sleep may dull your senses.

Never say "No" to a request—no matter how "beat" you are, and don't delegate responsibility. You're the only one that can be counted on, so carry the ball yourself at all times. And it's also a poor policy to take all the vacation time you have coming.

2. *The Weekend Athlete.* When you assume this role, you'll be joining thousands of others who are on their way to "the happy hunting grounds" in a hurry! It's far easier to kill yourself having a good time than you may realize—especially if you've spent all week sitting behind a desk. Tempt the fates by lifting weights, running a mile or two before Sunday breakfast, or by indulging in a fast game of basketball or handball with the kids. And if you feel that a lack of supervised exercise is the reason for that spare tire around your middle, join a 3-hour calisthenics class at the local gym—but be sure to indulge *only* on the weekends.

3. *The Jet-Setter.* When you travel, make sure you wear yourself to a frazzle. One good way is to get up at the crack of dawn, catch a plane to your destination, work all day, then late at night jet back home—to save the few bucks a hotel or motel would cost you. If you drive on business or pleasure trips, instead of flying, drive all day and night to see your client or your friends—then head back immediately to the office or home.

If you sometimes feel that you can't catch up with yourself and that you're out of tune with your surroundings, you're probably a victim of "Jet Pace Fatigue." That's just fine! But don't listen to doctors, who have discovered that jet travel which crosses back and forth over time zones, upsets the body's metabolism. And don't follow the advice of the American Hotel & Motel Association, that adequate rest and comfortable lodgings are important to your health during a long trip. After all, it's your life! What do they know?

4. *The Meal-Misser.* Here's another easy ticket to

the Coronary Club; just forget about your eating habits. A balanced diet at three regular meals a day is great for kids, but you're a busy grown man. A restful meal is a waste of time for the man-on-the-go. You'd probably get more done by working at your desk or cramming an extra conference into the meal hour. Missing meals has a way of making you hungry *between* meals. So keep plenty around to nibble on during the day. In the process of feeding your frustrations, you may eat your way into the hospital—and maybe even an early grave!

5. *The "Teacher."* When on the road make sure you're the fellow who teaches the other guys a lesson. It's really important. After all, the teacher should feel that he alone has the job of protecting the public—and that's a real service. On the highway, he zooms out around the offending driver or refuses to dim his lights if the other guy doesn't. He is often a "knight in an older-model"; new car owners rarely do this. His common curse is, "I'll teach those dopes!" He's already worked himself into a wreck; the next wreck may be his car!

If you find yourself falling into any of these five roles, get out your shovel and start digging. The standard size for graves, by the way, is nine feet by thirty inches.

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The Kansas Medical Society—1967-1968

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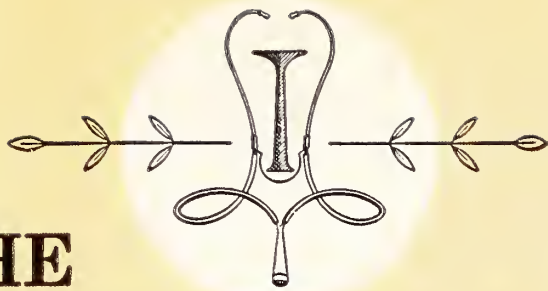
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District 8.....	Bruce G. Smith, Arkansas City
District 9.....	S. C. McCrae, Salina
District 10.....	Ralph R. Melton, Marion
District 11.....	Ernest W. Crow, Wichita
District 12.....	Frederick P. Wolff, Pratt
District 13.....	Eugene T. Siler, Hays
District 14.....	Marvin O. Steffen, Great Bend
District 15.....	Richard H. Hill, Meade
District 16.....	J. J. Marchbanks, Oakley
District 17.....	J. A. Barnard, Garden City
District 18.....	R. W. Hughes, Lawrence

OFFICERS OF COMPONENT SOCIETIES—1967

<i>Society</i>	<i>President</i>	<i>Secretary</i>
Allen.....	George F. DeTar, Iola.....	Eugene Myers, Iola
Anderson.....	Mildred J. Stevens, Garnett.....	Robert L. Stevens, Garnett
Atchison.....	Charles S. Brady, Atchison.....	Iva R. Morrison, Atchison
Barton.....	Clair J. Cavanaugh, Great Bend.....	John M. Holt, Great Bend
Bourbon.....	John F. Benage, Fort Scott.....	Stanley L. Chow, Fort Scott
Butler.....	Kenneth B. Dellett, El Dorado.....	William N. Haffner, Augusta
Central Kansas.....	Vale O. Page, Plainville.....	Victor M. Eddy, Hays
Chautauqua.....	I. Claire Hayes, Cedar Vale.....	William K. Walker, Sedan
Cherokee.....	Forrest H. Jones, Columbus.....	George Belcher, Columbus
Clay.....	Carl H. Ruff, Clay Center.....	Richard H. O'Donnell, Clay Center
Cloud.....	Harvey S. Smith, Concordia.....	R. Roy Nixon, Concordia
Cowley.....	Joseph H. Depoe, Winfield.....	James N. Winblad, Winfield
Crawford.....	Maurice F. Stock, Pittsburg.....	John G. Esch, Pittsburg
Dickinson.....	J. O. Gilliland, Herington.....	Dennis Richards, Herington
Douglas.....	Dale L. Clinton, Lawrence.....	Corbin E. Robison, Lawrence
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Finney.....	C. E. Petterson, Syracuse.....	H. M. Wiley, Garden City
Flint Hills.....	E. Lamonte Gann, Emporia.....	Gould C. Garcia, Emporia
Ford.....	Robert D. Boles, Dodge City.....	Max A. Deardorff, Dodge City
Franklin.....	Chester H. Strehlow, Ottawa.....	Louis N. Speer, Ottawa
Geary.....	Leslie J. Brethour, Junction City.....	Harry E. O'Donnell, Junction City
Greenwood.....	Cecil D. Baird, Eureka.....	Virgil C. Hollenbeck, Eureka
Harvey.....	Wilmer A. Harms, Hesston.....	Donald D. Decker, Halstead
Iroquois.....	Melvin H. Waldorf, Jr., Greensburg.....	Ralph Cramer, Plains
Jackson.....	James C. Seeley, Holton.....	M. Ross Moser, Holton
Jefferson.....	W. A. Madison, Nortonville.....	C. P. Arnold, Valley Falls
Johnson.....	William R. Brown, Shawnee Mission.....	Terry R. Dennison, Shawnee Mission
Labette.....	Evert C. Beaty, Parsons.....	Guy W. Cramer, Parsons
Leavenworth.....	Kenneth L. Graham, Leavenworth.....	Andres Grisolia, Leavenworth
McPherson.....	Arthur H. Dyck, McPherson.....	J. Richard Johnson, McPherson
Marion.....	Abraham C. Eitzen, Hillsboro.....	G. George Ens, Hillsboro
Miami.....	William Brown, Paola.....	Jack G. Rowlett, Paola
Mitchell.....	Roger P. Weltmer, Beloit.....	
Montgomery.....	Kenneth L. Knuth, Independence.....	William G. Chappuie, Independence
Neosho.....	G. L. Ashley, Chanute.....	Earl B. Gehrt, Chanute
Northeast Kansas.....	Morgan L. Mollohan, Seneca.....	J. Howard Gilbert, Seneca
Northwest Kansas.....	Ross L. Jewell, Bird City.....	Royce C. Walz, St. Francis
Osborne.....	William E. St. Clair, Downs.....	J. E. Henshall, Osborne
Pawnee.....	Samuel T. Coughlin, Larned.....	Thomas D. Ewing, Larned
Pottawatomie.....	Thomas Dechairo, Westmoreland.....	Bill L. Braden, Wamego
Pratt-Kingman.....	Vernon W. Filley, Pratt.....	Frederick P. Wolff, Pratt
Reno.....	Norman C. Bos, Hutchinson.....	Kenneth E. Hedrick, Hutchinson
Republic.....	E. J. Chaney, Belleville.....	P. U. Hunsley, Belleville
Rice.....	Curtis V. Wolf, Lyons.....	P. E. Beauchamp, Sterling
Riley.....	James S. Hunter, Jr., Manhattan.....	Dale L. Schwartz, Manhattan
Saline.....	Neal M. Jenkins, Salina.....	Carey A. Hartenbower, Salina
Sedgwick.....	Ben H. Buck, Jr., Wichita.....	Henry O. Marsh, Wichita
Seward.....	Woodrow W. Campion, Liberal.....	Jess W. Koons, Liberal
Shawnee.....	William R. Roy, Topeka.....	Robert C. Lawson, Topeka
Smith.....	Dennis A. Hardman, Smith Center.....	V. E. Watts, Smith Center
South Central Tri-County.....	Ward M. Cole, Wellington.....	M. D. Christensen, Kiowa
Stafford.....	O. W. Longwood, Stafford.....	C. Everett Brown, Stafford
Washington.....	D. A. Bitzer, Washington.....	L. L. Huntley, Washington
Wilson.....	Richard R. Brummett, Neodesha.....	F. A. Moorhead, Neodesha
Woodson.....		H. A. West, Yates Center
Wyandotte.....	Philip C. Nohe, Kansas City.....	Sherman M. Steinzeig, Kansas City



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OCTOBER
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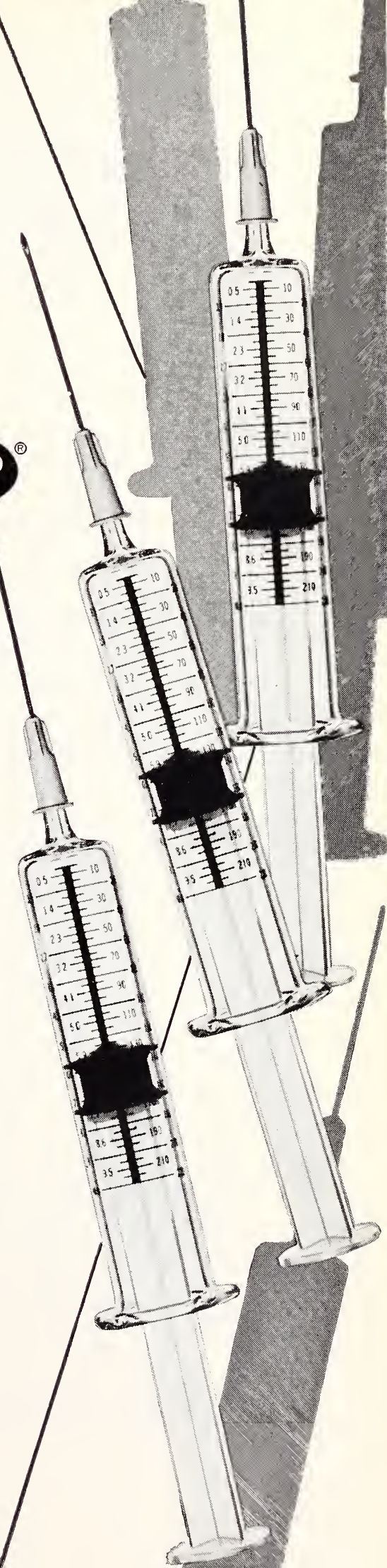
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The JOURNAL of the KANSAS MEDICAL SOCIETY

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Copyright, 1967, by the Kansas Medical Society

Editor: Orville R. Clark, M.D., Topeka.

Editorial Board: Orville R. Clark, M.D., Editor; David E. Gray, M.D., Topeka; Richard Greer, M.D., Topeka; Donald R. Pierce, M.D., Topeka; John A. Segerson, M.D., Topeka.

Associate Editors: Jesse D. Rising, M.D., Kansas City; Donald P. Trees, M.D., Wichita.

Managing Editor and Advertising Manager: Mary Rogers, 315 West Fourth Street, Topeka 66603.

Business Manager: Oliver E. Ebel, 315 West Fourth Street, Topeka 66603.

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CONSTITUTION

and

BY-LAWS

KANSAS MEDICAL SOCIETY



Adopted by the House of Delegates, May 3, 1967

INTRODUCTION

A committee under the Commission on Society Organization revised the Constitution and By-Laws of this Society. Their recommendations were adopted by the House of Delegates on May 3, 1967 and, as here printed, are the principles that direct Society operation.

Revisions in policy are extensive. Classifications relating to membership have been altered, expanded and clarified providing for a somewhat broader base of eligibility. The composition of the Council has been changed into more logical and better defined representation. Duties of officers and the succession to office is revised and language has been modernized in an effort to obtain precision.

Immediately apparent is the altered format. A decimal identification system now replaces the former, sometimes cumbersome, chapter, section and sub-section outline. Once understood, the numbers can rapidly guide the reader to his destination. The numbers progress consecutively. Figures to the left of the decimal point indicate what were previously chapters. In a few instances it appeared preferable to divide a chapter into components rather than to create additional chapters. This is indicated by a second number to the left of the decimal point.

To the right of the decimal, also in consecutive order, can be traced the sections, sub-sections and smaller divisions. For example, the first number to the right of the decimal represents sections. The next farther right refers to items under that section, except when a series reaches 10 and beyond this is indicated by a comma. A zero is used to identify situations which do not lend themselves to consecutive enumeration, as for example an introduction.

Included also are items of historical interest, the Charter; of professional interest, the Principles of Medical Ethics; and an index. Your committee attempted, wherever possible, to make this document coincide with that of the American Medical Association and borrowed extensively from the by-laws of other state medical societies. A perusal is recommended to give the physician an insight into the structure and the operation of the Kansas Medical Society.

GLENN R. PETERS, M.D., Committee Chairman
CLAIR C. CONRAD, M.D., Dodge City
O. W. DAVIDSON, M.D., Kansas City
JOHN L. MORGAN, M.D., Emporia
V. DEAN SCHWARTZ, M.D., Wichita
THOMAS F. TAYLOR, M.D., Phillipsburg
JAMES G. LEE, JR., M.D., Commission Chairman

ACT OF INCORPORATION

An Act to Incorporate the Kansas Medical Society

Be it enacted by the Governor and Legislative Assembly of the Territory of Kansas:

Section 1

Amory Hunting, S. B. Prentiss, J. P. Root, A. Fuller, C. F. Kobb, J. W. Robinson, J. B. Wheeler, L. C. Tolles, S. C. Harrington, A. Danford, C. E. Minor, J. B. Woodward, W. Madison, J. H. Phelps, O. Brown, Charles Robinson, M. F. Holladay, H. J. Canniff, A. J. Ritchie, M. Baily, J. M. Pelot, H. H. Beals, J. G. Blunt, T. Linsey, G. W. Beaumont, J. Leigh, A. Newman, H. Harttmann, Wm. Graham, and their associates and successors, who shall be elected to membership as hereinafter provided, are hereby constituted a body corporate and politic by the name of the Kansas Medical Society, and shall have perpetual succession forever. Said Society may have a common seal, and change or alter the same at pleasure.

Section 2

That members of said Society, in their corporate capacity, may elect such officers as they shall judge necessary for its government and the management of its affairs, determine the name, power, duty and term of office of each; also the time and manner of said elections.

Section 3

Said Society, by and in their corporate name, may have all the rights, privileges, and powers of a natural person in law and equity.

Section 4

Said Society may elect such persons to membership as they shall judge proper, and shall have power to expel, suspend, or disfranchise the same, as members, from all the rights and privileges of the Society; but such expulsion, suspension, or disfranchisement shall be by a vote of two-thirds of all the members present at a regular meeting of said Society, of which due notice shall have been given.

Section 5

Said Society shall have full power to make and enforce by-laws, and impose and collect at law any reasonable fines, not exceeding fifty dollars, as may be provided in said by-laws, for any and every violation or infraction thereof.

Section 6

Said Society shall issue certificates of membership to all its members, under such regulations as its by-laws may prescribe, and may also grant licenses to all respectable physicians, non-graduates, who shall, on examination, be found qualified for the practice of medicine and surgery, or either, to practice those branches for which they are found qualified.

Section 7

Any three members of said Society may organize county or auxiliary societies in any county of this Territory; and said auxiliary society, when so organized, shall have all the powers and privileges, in the corporate name which they may adopt, that are conferred by this act upon the Kansas Medical Society; and the officers of said auxiliary societies shall be honorary members of the Kansas Medical Society.

Section 8

A meeting of the corporators, or a part thereof, shall be held in Lawrence, on February 10, A. D. 1859, for the purpose of electing the first officers and completing the organization.

Section 9

This act to take effect and be in force from and after its passage.

A. LARZELERE
Speaker of the
House of Representatives

C. W. BABCOCK
President of the Council
Approved February 10, 1859

S. MEDARY, Governor

CHARTER DECLARED VALID 1881

In 1880 a lawsuit reached the Supreme Court of Kansas contending in part:

"1. That the charter of the Society has expired by statutory limitation ;

"2. That the power of the territorial legislature, being permissive and temporary only, could confer no invested right, by contract or otherwise, which would bind the state against its consent ;

"3. That the charter of the Society was granted by a territorial act, not accepted or preserved by the state ; and

"4. That the legislature did not, and has not, the power under the constitution to, recognize or validate the existence of the Society, nor to grant it additional powers by the act of 1879. . . ."

In the January term, 1881, in the case, STATE OF KANSAS ex rel. v. D. W. Stormont and others, the Supreme Court of the State of Kansas, with all justices concurring, said in part:

"The Society was incorporated, by a special act of the territorial legislature, on the 10th day of February 1859. . . ." *It is,* ". . . hereby constituted a body corporate and politic, by the name of the 'Kansas Medical Society,' and shall have perpetual succession for-

ever. It is conceded that the legislature of the territory had the power to incorporate the Society by a special act. Having the power to create the corporation, it had the further power to endow it with all the attributes of a corporation, not inconsistent with the provisions of the Constitution of the United States, and the act organizing the territory of Kansas, approved May 30, 1854. . . . Therefore, within this definition, immortality is a legitimate attribute to be conferred on a corporation. . . . When not limited or forbidden by constitutional or organic law, the right to confer perpetual succession by legislative authority, so far at least, as human agency can confer such an attribute, cannot be logically questioned. . . . This much is clear: The charter did not expire by the law of 1855.

"Our conclusions upon the foregoing matters are that the Kansas Medical Society was lawfully chartered by the territorial legislature ; that it was legally endowed with perpetual succession forever ; that the constitution did not suspend or repeal its charter ; that, if the state legislature has the power to suspend or repeal the charter (which we do not decide) it has never exercised, or attempted to exercise, the power ; and that the Society is a lawfully existing corporation."

CONSTITUTION

ARTICLE I—Title and Definition

The name of this organization is THE KANSAS MEDICAL SOCIETY. The SOCIETY is comprised of the Component Societies chartered by this organization.

ARTICLE II—Objects

The object of this SOCIETY is to unite the medical profession of the State of Kansas in promoting the science and art of medicine and protecting the health of the citizens of this State.

ARTICLE III—Component Societies

County or multi-county societies holding a charter from this organization are known as Component Societies.

ARTICLE IV—Members

THE KANSAS MEDICAL SOCIETY is composed of members of the Component Societies and others as provided in the By-Laws.

ARTICLE V—House of Delegates

The House of Delegates is the primary legislative and governing body of this SOCIETY. The members of the House of Delegates will be elected by the Component Societies as provided in the By-Laws. This body will transact the business of the SOCIETY and will elect officers except as otherwise provided in the By-Laws.

ARTICLE VI—Officers

The officers of this SOCIETY are a President, a President-Elect, a First Vice President, a Second Vice President, a Secretary, a Treasurer, a Speaker and a Vice Speaker of the House, Delegates and Alternate Delegates to the American Medical Association. The terms of office, qualifications, and method of election shall be provided in the By-Laws.

ARTICLE VII—Council Districts and the Council

The boundaries of the Council Districts shall be specified in the By-Laws. The Council consists of one Councilor from each Council District, the officers of the SOCIETY, and advisory members as designated in the By-Laws. The Council may transact business of the

SOCIETY between sessions of the House of Delegates subject to the approval of that body and as prescribed in the By-Laws.

ARTICLE VIII—Meetings

The SOCIETY will hold an annual meeting for the presentation and discussion of subjects pertaining to the science and art of medicine. The House of Delegates shall convene at the annual meeting and at other times as necessary for the transaction of the business of the SOCIETY. The place of the annual meeting shall be approved by the House of Delegates, following a recommendation of the Council.

ARTICLE IX—Funds, Dues, Assessments

Funds for the functioning of this SOCIETY shall be raised by an equal annual dues or by assessment of the Members who are subject to these charges as provided in the By-Laws. The amount of dues and assessments shall be determined by the Council and approved by the House of Delegates.

ARTICLE X—Seal

The following insignia shall be the official seal of this SOCIETY:



The official seal shall at all times remain in the custody of the Secretary.

Amendments to Constitution

ARTICLE XI—Amendments

Amendments to this Constitution require an affirmative vote of two-thirds of the Delegates present provided the question has been introduced at the previous annual session, or upon recommendation by the Council and published twice in THE JOURNAL OF THE KANSAS MEDICAL SOCIETY, or submitted by the Council to each Component Society at least two (2) months in advance of the meeting.

BY-LAWS

1.0 Membership

1.1 EACH COMPONENT SOCIETY shall judge the qualifications and classify its own members. When names are submitted on a properly prepared roster to the state office along with payment of the full annual assessment to the Kansas Medical Society and the American Medical Association, if required by their classification, the listed physicians shall become members of the Kansas Medical Society, and they shall remain so as long as they are members in good standing in their component societies and the dues to the Kansas Medical Society and American Medical Association remain paid.

1.2 BEFORE A CHARTER is issued to any component society, ample and full opportunity to become a member shall be given to every physician residing or practicing in the area encompassed by that society.

1.3 EVERY ELIGIBLE PHYSICIAN shall be privileged to apply for membership in an established component society encompassing his area of practice.

1.4 WHEN A MEMBER'S PRACTICE is interrupted by an authorized absence, his dues will not be refunded except upon recommendation by the component society to which he belongs.

1.5 MEMBERS MAY ATTEND an annual session after first registering and being verified.

1.6 CLASSIFICATION OF MEMBERS

1.61 Members with the right to vote and hold office:

1.611 *Members who pay full dues.* Members of a component society who hold a degree of Doctor of Medicine or its equivalent and are licensed by the Kansas State Board of Healing Arts.

1.612 *Members who are dues-exempt.* Members who have been designated by their component society to be dues-exempt for one of the following classifications:

1.6121 *Hardship:* Members experiencing financial hardship or with an extended illness which prevents them from engaging in practice.

1.6122 *Retirement:* Members who have retired from active practice.

1.6123 *Service:* Members temporarily serving with the armed forces.

1.6124 *Emeritus:* Members over seventy (70) years of age who have been dues-paying members for over

ten (10) years. This is not an automatic classification, and those wishing to retain active membership status may do so.

1.62 Members with full privileges except for the right to vote and hold office. They apply for membership through a component society but are assessed less than the full amount of dues:

1.621 *Intern and Resident Members* engaged in full-time training will be assessed annual dues of one dollar (\$1.00).

1.622 *Academic Members:* Physicians, whose activities are predominantly teaching, administration, or research in approved medical schools. Those with a teaching classification below the level of assistant professor shall pay fifty per cent (50%) of the regular dues and assessments.

1.63 Honorary Members. Persons eligible for membership who are voted into honorary membership by the House of Delegates. They pay no dues and are ineligible to vote or hold office:

1.631 Members of chartered national medical societies of foreign countries.

1.632 Physicians from Kansas who have graduated from recognized medical schools and who are serving outside of the United States as missionaries or in educational or philanthropic labors.

1.633 Student Members. Senior students at the University of Kansas School of Medicine and senior students at any recognized medical school whose home is in Kansas. They shall receive the University of Kansas issue of the JOURNAL and be on the mailing list of the Kansas Medical Society.

1.634 Non-physicians, whether Kansans or not, who have made an outstanding contribution to the Kansas Medical Society or to the field of Medicine in general.

2.0 Assessments

2.1 THE AMOUNT OF the annual assessment for the Kansas Medical Society only shall be determined by the Council after consideration of the annual budget for the ensuing year and announced to the various component societies not less than sixty (60) days before the beginning of each fiscal year. Such assessments shall be levied against and paid by the component societies in the manner provided by this Constitution and By-Laws, except that any new members of this Society being accepted by a component

society after July 1, shall be assessed one-half the sum decided upon by the Council, and shall be accorded all the rights and benefits of this Society, including defense, until the succeeding January 1. The amount of membership dues in the American Medical Association shall be fixed by that organization.

2.2 ASSESSMENTS SHALL include subscription to the JOURNAL OF THE KANSAS MEDICAL SOCIETY at a rate determined by the Editorial Board with the approval of the Council.

3.0 Annual and Special Sessions

3.1 THE SOCIETY SHALL hold an annual session at the time and place determined by the Council at the preceding annual session. The date and location of the annual session may be changed by the President subject to the approval of the Council. *Provided:* that each component society is notified of the change at least five (5) weeks before the new date is selected.

3.2 SPECIAL MEETINGS of the Society may be called by the President upon approval of the Council.

4.0 General Meetings and Sections

4.1 THE SCIENTIFIC ASSEMBLY at the annual sessions may be divided into general meetings and sections by the local Committee on Arrangements with approval of the Committee on State Meeting Format.

4.2 THE GENERAL MEETINGS and sections of the Society shall be devoted to scientific work together with such reports and announcements as may come from the House of Delegates or the Council.

4.3 THE SOCIETY RESERVES the right to publish in the JOURNAL any paper read before the Society. The Society also shall be entitled to a copy of the paper if so desired.

4.4 REGISTRATION FOR GENERAL AND SECTIONAL MEETINGS. Only the following shall be permitted to register and attend:

4.41 *Members*—Members of the Society who are in good standing.

4.42 *Invited Guests*—Non-members of the Society may be invited to the general session or sections, but may be excluded by the Executive Committee of the Society or officers of the sections.

4.43 *Residents and Interns*—Residents and interns who are graduates of approved medical schools and who are certified by their hospital.

4.44 *Medical Students*—Medical students of approved medical schools who are certified by their schools.

4.5 THE SCIENTIFIC ASSEMBLY may be divided into sections representing the various specialties in the practice of medicine. Any member of the Society shall be entitled to attend the scientific programs of specialty sections.

4.51 An application for a new section or a request to discontinue a section shall be referred to the Council for study, whereupon the Council shall make a recommendation to the House of Delegates for final action.

4.52 Sections will be governed by their respective officers.

4.53 Officers will consist of a chairman, vice-chairman and secretary-treasurer.

4.54 Terms of office will be for one (1) year and each officer may succeed himself.

4.55 Each section will prepare its own program subject to approval by the Committee on State Meeting Format. Programs must be submitted to the committee far enough in advance to be included in the annual session program.

4.56 Papers and records of proceedings of the sections shall become the property of the Society and filed in the central office of the Society.

4.57 All resolutions and memorials of a general meeting or a section, intended to be issued in the name of the Society, must be approved by the Council or House of Delegates before being issued or becoming effective.

4.58 Each section may enact its own rules of conduct that do not conflict with the Constitution or By-Laws of the Society.

4.58 Sections approved by the Society include:

4.581 Kansas Society of Anesthesiology

4.582 EENT Section

4.583 Kansas Chapter, American Society of Internal Medicine

4.584 Kansas Obstetrical Society

4.585 Kansas Orthopedic Club

4.586 Kansas Society of Pathologists

4.587 Kansas Chapter, American Academy of Pediatrics

4.588 Kansas Psychiatric Society

4.589 Kansas Chapter, American College of Radiology

4.58, 10 Kansas Chapter, American College of Surgeons

4.58, 11 Kansas Chapter, American Academy of General Practice

4.58, 12 Kansas Allergy Society

5.0 House of Delegates

5.01 INTRODUCTION AND GENERAL POWERS

The House shall consider and advise on matters of interest to the medical profession and of the public in those important matters wherein it is dependent upon the medical profession and shall advocate all proper medical and health legislation, and the diffusion of popular information in relation thereto.

It shall attend to the scientific work and spirit of this Society, and it shall constantly attempt to improve the quality of health care in this state.

The House of Delegates is the ultimate authority in legislative and business affairs of this Society.

It may appoint committees from its own members or from members of the Society. Such committees shall report to the House, and may be present and participate in the debates on their reports.

The House may delegate and empower the Council or a special standing committee to employ, advise and supervise an Executive Director whose duties shall be as provided in these By-Laws.

The House shall review the annual budget submitted by the Council and shall make annual appropriations for the expenditures of this Society. It may amend current appropriations at any meeting.

A summary of the proceedings of the House of Delegates shall be published following each annual session in the JOURNAL OF THE KANSAS MEDICAL SOCIETY.

5.1 COMPOSITION

The House of Delegates shall be composed of delegates selected by the component societies, by the recognized sections, and the past presidents, and the elected officers of this Society. Members of the Society may attend plenary sessions and others may attend upon invitation of the Speaker.

5.2 APPORTIONMENT

5.21 *Component Societies*—Each component society having made its annual report and paid its assessments as provided in this Constitution and By-Laws shall elect one (1) delegate and one (1) alternate to the House of Delegates for each twenty (20) members and major fraction thereof. Each component single county society shall be entitled to at least one (1) delegate and one (1) alternate, and provided that component multicounty societies have fewer than

seventy-five (75) members are entitled to elect one (1) delegate and one (1) alternate, PLUS one (1) delegate and one (1) alternate for each ten (10) members and major fraction.

5.22 *Organized Specialties*—Each organized specialty section recognized by the Society shall be entitled to one (1) delegate and one (1) alternate to be chosen by the section.

5.23 *Listing Names*—It is the duty of the secretary of each component society and specialty section to send the names of the delegate(s) and alternate(s) to the Executive Director at least sixty (60) days prior to each session.

5.3 DELEGATES

5.31 Qualifications

5.311 *Delegates*—Each delegate must be a member in good standing of the Society.

5.312 *Alternates*—An alternate to each delegate shall be elected to substitute for that delegate. Each alternate must be a member in good standing of the Society.

5.313 *Substitute Alternate*—The House may elect by majority vote a substitute alternate to serve as a delegate for that meeting for a component society which has no delegate or alternate present.

5.314 *Proxies*—No proxies are recognized.

5.32 Term

5.321 *Length*—Each delegate and alternate is elected for one (1) year and shall assume office at the first session of the House succeeding his selection.

5.322 *Vote*—Each delegate is entitled to one (1) vote.

5.33 Registration

All persons attending a session of the House shall register prior to their admission. These registrations are certified by the Committee on Credentials.

5.4 PROCEDURE

5.41 Order of Business

5.411 *First Session*—The order of business of the first session of the House, unless otherwise ordered by a two-thirds vote of the delegates present, shall be:

5.4111 Registration of delegates, Society members and visitors.

5.4112 Call to order by the Speaker.

5.4113 Announcement of number of delegates present and registered and the presence of an official quorum.

5.4114 Reading of the minutes of last and any special meeting.

5.4115 The report of the nominating committee is read, after which nominations are made from the floor for the office of President-elect, First Vice-President, Second Vice-President, Speaker, Vice-Speaker, Secretary, Treasurer, A.M.A. Delegate and A.M.A. Alternate Delegate, and a ballot vote where three or more candidates have been nominated for one office so that the election at the second session of the House shall present not more than two (2) candidates for each office.

5.4116 Reports and resolutions from commissions.

5.4117 Reports from committees and officers.

5.4118 Report of Executive Director.

5.4119 Report of Constitutional Secretary.

5.411, 10 Report of Treasurer and approval of the budget and appropriations for annual expenditures.

5.411, 11 Unfinished business.

5.411, 12 New business and resolutions offered.

5.411, 13 Address of the President (optional).

5.411, 14 Address of the President-Elect (optional).

5.411, 15 Announcements—to include: (1) members of each reference committee; (2) time and place of reference committee meetings; (3) names and districts of expiring councilor and alternate terms; (4) results of primary elections; (5) other.

5.411, 16 Adjournment to reconvene at second meeting.

5.412 *Second Session*—The official order of business for the second meeting of the House at each annual session shall be:

5.4121 Registration and seating of delegates, Society members and visitors.

5.4122 Call to order by the Speaker.

5.4123 Announcement of number of delegates, the presence of an official quorum.

5.4124 Election of officers (by ballot).

5.4125 Election by ballot of the Nominating Committee.

5.4126 Report of reference committees.

5.4127 Unfinished business.

5.4128 New business (this requires consent of a two-thirds majority of delegates present).

5.4129 The Speaker announces the President-Elect is now President. The President then announces the councilors and alternates elected and meeting place of the Council.

5.412, 10 Installation by the President of the new Speaker and Vice-Speaker.

5.412, 11 Adjournment.

5.413 *Special Session*—The official order of business for a special session of the House shall be:

5.4131 Registration of delegates, Society members and visitors.

5.4132 Call to order by the Speaker.

5.4133 Announcement of number of delegates present and the presence of a quorum.

5.4134 Announcement of business for which session was convened.

5.4135 Report of the commission chairmen and officers pertinent to the subjects for which the special session is convened.

5.4136 Assignment of resolutions to reference committees.

5.4137 Adjournment of the First Session.

5.4138 Second Session—Call to order by the Speaker.

5.4139 Report of the reference committees.

5.413, 10 Announcements.

5.413, 11 Adjournment.

5.42 Privilege of the Floor

The House of Delegates by a two-thirds vote of those present may invite any person to address the House.

5.43 Introduction of Resolutions

Reports and resolutions for consideration of the House shall be sent to the Executive Office at least six (6) weeks before the date of the annual session. Resolutions or amendments introduced on the floor of the House must be submitted to the Speaker in writing at the time of introduction.

5.44 Process of Resolutions:

5.441 First Session

5.4411 At the first session of the House, all business shall be introduced by title, and referred without debate or action to a reference committee, except as otherwise stipulated in these By-Laws.

5.4412 Resolutions not previously published and dis-

tributed to the members of the House shall be read in full.

5.442 Second Session

5.4421 At the second session, the House will receive the report of each reference committee on all business referred to it.

5.4422 Each item of business so reported upon shall be subject to debate and amendment prior to final action.

5.4423 No new business may be considered at the second session of the House except as provided in the By-Laws.

5.4424 If a reference committee fails to submit a report at the second session of the House upon any resolution referred to it, such resolution may be placed before the House by the Speaker and must be so placed upon request of any member.

5.443 Special Session

Resolutions may be considered by the House acting as a whole or by a reference committee prior to action by the House.

5.45 Quorum

Fifty per cent (50%) of the delegates or their alternates shall constitute a quorum of the House of Delegates.

5.5 SESSIONS OF THE HOUSE OF DELEGATES

5.51 *Location*—The time and place shall be determined by the Council. Notice of annual meetings shall be sent to each component society prior to January 1 of the year the meeting is to be held and shall state the time and place of the meeting.

5.52 *Invitation from Component Societies*—The Council shall, not later than October, consider invitations received from component societies to serve as host to the annual session for the fifth year following and shall select the meeting place and the date. Should invitations not be received, the Council shall select a meeting place.

5.53 *Regular*—The House of Delegates shall conduct two meetings, separated by at least twenty-four (24) hours, during each annual session. These may be adjourned and reconvened as necessary.

5.54 *Special*—Special sessions shall be called by the Speaker as requested by the President upon approval of the Council or the Executive Committee. Special sessions shall be called by the Speaker upon the written request of twenty-five per cent (25%) of the delegates from component societies.

When a special meeting is called, the Executive Di-

rector shall notify each component society at least twenty (20) days before the meeting date. The notice shall specify the time and place of meeting and the purpose for which it is called.

5.6 MEETINGS

5.61 *Plenary*—The House may conduct a meeting to which any person may be admitted. By majority vote of the delegates present, a plenary meeting may become a closed or executive meeting.

5.62 *Closed*—A closed meeting is restricted to members of this Society and to members of the staff.

5.63 *Executive*—An executive meeting is limited to delegates and to such employees of this Society necessary for the functioning of the House.

5.7 DESIGNATION

The Credentials Committee and the Reference Committees are regularly appointed committees of the House of Delegates.

5.8 MEMBERSHIP

5.81 The Credentials Committee shall consist of three (3) members from separate Council districts appointed by the Speaker for a term of one (1) session. The Speaker shall designate the chairman.

5.82 Each Reference Committee shall consist of not less than three (3) nor more than seven (7) members of the House appointed by the Speaker. The Speaker shall designate the chairman.

5.9 DUTIES

5.91 *Credentials Committee*

5.911 The Credentials Committee shall examine the credentials of all who seek admission to the House, and rule on the seating of all delegates. Any member of the Society registered for the annual meeting may be admitted to the visitors' section.

5.912 An individual whose credentials are questioned may appeal to the House immediately following the report of the Credentials Committee that a quorum exists and the issue shall be decided at that time.

5.913 The Speaker shall appoint a Sergeant-at-Arms.

5.914 The Credentials Committee shall report to the House upon request of the Speaker on:

5.9141 Total number of members of the House eligible to vote.

5.9142 Number of members registered and seated.

5.9143 Announcement of quorum.

5.92 *Reference Committees*

5.921 The Reference Committees are appointed for a session of the House to consider resolutions referred to them.

5.922 The duties of the Reference Committees shall be:

5.9221 To hold open hearings on all referred resolutions at a time and place announced at the first session of the House.

5.9222 To deliberate in closed session on each resolution, and after consideration recommend its final disposition in the House.

5.923 A member of a reference committee who wishes to make a minority report must refrain from signing the majority report and must make his intentions known to the other members of the reference committee while it is in closed session and prior to the presentation of the majority report to the House.

5.93 *Other Committees*

The Speaker may appoint such other committees as are needed.

6.0 Elected Officers

6.1 DESIGNATIONS

The elected officers of the Society are those specified in Article VI of the Constitution.

6.2 QUALIFICATIONS

An elected officer must have been for at least two (2) years immediately prior to his election an active member of the Kansas Medical Society. The Speaker and Vice-Speaker of the House shall be elected from among the members of the House.

6.3 TERMS

6.31 *President-Elect:*

The President-Elect shall be elected annually. He shall serve until the next inaugural after his election when he becomes President.

6.32 *First Vice-President, Second Vice-President, Speaker, Vice-Speaker, Secretary and Treasurer:*

The First Vice-President, Second Vice-President, Speaker, Vice-Speaker, Secretary and Treasurer shall be elected annually, each to serve for one (1) year or until a successor is elected and installed.

6.33 *A.M.A. Delegates:*

Representatives to the House of Delegates of the American Medical Association shall be elected for two-year terms of office which terms shall not expire in the same year. The term of the delegate-elect and alternate delegate-elect shall begin at the annual session of the American Medical Association the year succeeding their election.

6.4 PRESIDENTIAL SUCCESSION

If the President dies, resigns or is removed from office, the line of succession shall be the First Vice-President, the Second Vice-President, the Speaker, the Vice-Speaker.

6.5 INTERIM VACANCIES

Should vacancies occur in the office of Secretary or Treasurer the Council shall fill these positions as provided in the By-Laws.

6.6 NOMINATIONS

A Nominating Committee of five (5) shall be elected at the last meeting of the House of Delegates of each annual session by ballot from the past presidents who are still members of this Society. The five candidates receiving the greatest number of votes are elected and, in case of a tie vote on the fifth member, the committee will consist of six (6). The member receiving the greatest number of votes shall be the chairman. No member may serve for more than two (2) consecutive years and no member holding an elective office shall be eligible. The committee shall meet not later than ninety (90) days prior to the next annual session and present for publication in the JOURNAL a list of candidates for each elective office consisting of one or more candidates for the offices of president-elect, first vice-president, secretary, treasurer, delegate-elect, and an alternate delegate-elect to the American Medical Association, and three (3) or more candidates for the office of second vice-president. The candidates for treasurer should be named from residents of the vicinity of the central office whenever possible.

6.7 ELECTIONS

6.71 *Time*—The election of officers shall be held at the last meeting of the House of Delegates at each annual session. During the first session nominations for each office are made. When more than two (2) candidates are nominated for any office, a primary election shall be held at the first House of Delegates meeting. The name receiving the fewest votes shall be eliminated and balloting shall continue until not more than two (2) remain. Tellers shall announce in alphabetical order the names of the two who receive the largest number of votes for each office. In case there exists a tie for second place, another ballot shall be held to select a second candidate. At the last House of Delegates meeting each authorized delegate shall cast his ballot at the time he registers to attend the meeting, and this will constitute the election. In case of a tie, the Speaker, who does not vote otherwise, shall cast the deciding vote.

6.72 *Method*—All elections of officers shall be by ballot.

6.73 *Solicitation*—Any member judged by the Council to have solicited votes for himself shall be ineligible for office for two (2) years.

6.8 INSTALLATION OF THE ELECTED OFFICERS

Elected officers, except delegates and alternate delegates to the American Medical Association House of Delegates, shall be installed prior to adjournment of the House at the annual session and shall begin their term of office at the conclusion of the annual session.

6.9 INSTALLATION OF THE PRESIDENT

The oath of office shall be administered to the President-Elect during the President's Banquet at the annual session. The President-Elect shall become President at the conclusion of the business of the House at the annual session.

6.10 OFFICIALS IMPEACHED:

Officials impeached by the Council are tried by the House of Delegates. A two-thirds vote is necessary for conviction.

7.0 Duties of Officers

7.1 PRESIDENT

The President is the chief executive officer and principal spokesman of the Society. He shall counsel with officers, and others, toward the best interests of the public and this Society, to attempt to further the aims and activities of this Society to the fullest extent. He shall perform such services as custom, necessity and parliamentary procedure require. He shall in accordance with these By-Laws announce his appointments to commissions. He shall be an ex-officio member of all committees and commissions. He shall be extended an opportunity to preside at all major functions of the annual session and shall deliver an address at the time arranged by the Committee on Arrangements. He shall be encouraged to visit the various Council districts during his term of office.

7.2 PRESIDENT-ELECT

The President-Elect shall familiarize himself with the personnel and work of the various committees and of this Society in general. He shall be ready to counsel with the President on matters affecting the future of this Society, and shall otherwise prepare himself for assuming the leadership of this Society at the proper time. Except as is otherwise provided in the By-Laws, he shall appoint a chairman and other members of each commission, and other temporary committees, to serve during his term as President. The complete list of appointments to commissions shall be available for publication and distribution to the membership when he assumes the office of President.

7.3 FIRST VICE PRESIDENT

The First Vice-President shall assist the President in

the performance of his duties, shall preside in his absence at the meetings of this Society, or the Council, and shall represent the President in his absence.

7.4 SECOND VICE-PRESIDENT

The Second Vice-President shall also assist the President in the performance of his duties.

7.5 SPEAKER

The House of Delegates shall annually elect from its membership a Speaker and a Vice-Speaker whose terms of office begin upon adjournment of the last session of the House and continue through adjournment of the last session at the next annual session. They are eligible for succession.

The Speaker is the presiding officer over all sessions of the House. It is his duty, upon consultation with the Vice-Speaker, to appoint reference committees. He shall refer resolutions to reference committees and shall aid delegates and committees to the extent of his ability toward the end that all business of the House may be conducted in an efficient manner.

7.6 VICE-SPEAKER

In the absence of the Speaker or at his pleasure, the Vice-Speaker will preside over the House and will perform such duties as would otherwise be performed by the Speaker.

At the first session of the House, nominations shall be placed for the office of Speaker and for the office of Vice-Speaker. In the event there are more than two (2) nominations for either office, a primary ballot shall be taken and the names of the two (2) receiving the largest number of votes will appear on the ballot at the last session of the House where the election shall take place.

7.7 SECRETARY

The Secretary shall advise the Executive Director in all secretarial matters of this Society and shall act as the corporate secretary for the execution of official documents. He shall perform such duties as are placed upon him by this Constitution and By-Laws, and in the event of death, resignation or removal of the Executive Director, shall assume the duties of that office until the vacancy is filled.

7.8 TREASURER

The Treasurer shall be the custodian of all moneys, securities and valuable papers of this Society. He shall deposit them in safe banking institutions, or invest them, subject to the direction of the Council. He shall be bonded at the expense of this Society in such amount as the House may require. He shall pay all authorized obligations of this Society by vouchers which shall be countersigned by the President and Secretary. He shall keep a detailed account of all receipts and disbursements, and shall make an annual

report to the House concerning the financial transactions of this Society for the preceding fiscal year, the funds of this Society in his care and his actions as Treasurer. He shall subject his accounts to such examinations as this House or the Council may order. He shall establish a revolving fund in an amount approved by the Council for routine expenses of the Executive Office, which fund shall be set aside in a separate banking institution and be subject to check by the Executive Director with the understanding that disbursements therefrom shall be satisfactorily accounted by the Executive Director to the Treasurer before replenishment is made.

7.9 EXECUTIVE DIRECTOR

The Executive Director shall perform the duties usual to such office except those specifically imposed by this Constitution and By-Laws upon the officers, councilors, committees, commissions, and other representatives of this Society.

He shall be under the employ of the Council, or its representative committee, and in case of his death, resignation or removal, the Council, or its representative committee, shall have the power to fill the vacancy. He shall employ such assistants as the House, the Council, or their representative committees may direct. The amount of his salary shall be fixed by the Council, or its representative committee, with approval of the House of Delegates. He shall be allowed traveling expenses to the extent approved by the Council. He shall use the revolving fund with due regard for efficiency and good business judgment in the furtherance of the work entrusted to his care.

He shall be bonded at the expense of this Society in such amount as the Council may require.

He shall—

7.91 —account for, and promptly turn over to the Treasurer all funds of this Society which come into his hands;

7.92 —receive all bills against this Society;

7.93 —investigate their fairness and correctness;

7.94 —prepare vouchers covering the same;

7.95 —forward them, together with proper support, to the Treasurer for payment as provided in these By-Laws;

7.96 —keep an account with the component societies of the amount of their assessments, collect the same and promptly turn over the proceeds to the Treasurer;

7.97 —make an annual report of his activities to the House, and shall make such reports as the Council, or its authorized committees may require;

7.98 —within thirty (30) days preceding each annual session, submit his financial books and records to a certified accountant approved by the Council, whose report thereon shall accompany his annual report;

7.99 —with the advice of all interested officers, prepare and submit annually to the House a tentative budget of this Society for the ensuing fiscal year, together with the recommendations of the Council, or its authorized finance committee, thereon;

7.9, 10 —subject to instruction by the House, the Council, or the President, he shall act as general administrative officer and business manager of this Society. He shall refer to the proper officials all administrative questions as properly come within their jurisdiction;

7.9, 11 —attend the annual sessions, the meetings of the House, the Council, as many of the committee meetings as possible, and shall keep the minutes of their proceedings;

7.9, 12 —undertake secretarial functions for all officers, councilors, committees and commissions of this Society, and shall assist wherever possible in the performance of their duties;

7.9, 13 —with the cooperation of the secretaries of the component societies, he shall keep a record of all legally licensed doctors of medicine in this state, together with such information as is available about each. He shall transmit to the American Medical Association all copies of records that may be desired by that association, together with such other information as may be of value;

7.9, 14 —endeavor to visit component societies when his duties will permit, or when an emergency requires personal attention, and shall keep the officers of the component societies informed about the activities of this Society and of the medical profession in general by the issuance of bulletins;

7.9, 15 —supply the component societies with necessary forms and blanks for conducting their official business with this Society;

7.9, 16 —inform the Society upon all pending or enacted legislation and upon activities of governmental offices and agencies affecting the medical profession and public health;

7.9, 17 —secure, upon invitation, medical speakers to address lay organizations on subjects which are in accord with the aims and ideals of this Society. When requested, he shall assist the component societies in securing speakers and in preparing programs;

7.9, 18 —notify all members of meetings, officers of their election, and committee of their appointment and duties;

7.9, 19 —upon authorization by the Committee on Arrangements, he shall prepare and issue an official program for each annual session;

7.9, 20 —provide for the registration of members and delegates at each annual session;

7.9, 21 —be the custodian of the general papers and records of this Society, except as properly belong in the custody of other officials;

7.9, 22 —conduct the official correspondence of this Society, and shall sign all authorized communications;

7.9, 23 —aid the councilors in organizing and improving the component and district societies, and in the extension of the usefulness and influence of this Society;

7.9, 24 —act as business manager of the JOURNAL OF THE KANSAS MEDICAL SOCIETY under supervision of the Editorial Board, and in a similar capacity to the extent authorized for other publications of this Society;

7.9, 25 —perform any additional duties as may be required by the House, the Council, their committees, or the President.

8.0 The Council

8.1 COMPOSITION

8.11 Members of the Council are the President, President-Elect, First Vice-President, Second Vice-President, Secretary, Treasurer, the Speaker and Vice-speaker of the House, Delegates and Alternate Delegates to the American Medical Association, and a councilor from each Council district. Each councilor and an alternate are elected by a caucus of delegates from the component societies of the district at the annual session of the Society. The elected alternate replaces an active member in his absence.

8.12 Associate membership of the Council includes alternate councilors and one (1) representative each from the University of Kansas School of Medicine, the Kansas State Board of Health, the Kansas State Board of Healing Arts, the president of Kansas Blue Shield, and one (1) representative each from recognized specialty organizations. Associate members may attend plenary sessions of the Council but shall not be entitled to vote.

8.13 The Executive Director of the Society attends all sessions of the Council as an administrative advisor.

8.14 Advisory members of the Council are the editor of the JOURNAL, chairmen of the Society commissions, and past presidents. They may attend plenary sessions of the Council, but are not entitled to vote.

8.15 The Executive Committee of the Council shall be composed of the President, the President-Elect, the Immediate Past President, the First Vice-President, the Second Vice-President, the Secretary, and the Treasurer. The committee shall meet regularly and at least six (6) times during each year at the call of the President, and shall have authority to act in the interim between meetings of the Council upon all matters which would ordinarily require approval by the Council, which do not properly necessitate a special meeting of the Council and which have not been delegated elsewhere by these By-Laws.

8.2 MEETINGS

8.21 The Council meets at the conclusion of each annual session of the House of Delegates and at the call of the President during the year. A meeting is convened upon petition of five (5) active members of the Council.

8.22 Business may be transacted when a quorum is present. A majority of the active members is a quorum.

8.23 Adequate notice must be given the members by the Executive Director of the time and place of meetings.

8.3 DUTIES

8.31 Between annual or special sessions of the House of Delegates, the Council or the Executive Committee of the Council will transact business on behalf of the Society. Council or Executive Committee action may not conflict with former action of the House of Delegates. Transactions of the Council otherwise have the same authority as those of the House of Delegates except they cannot bind the Society beyond its next annual session.

8.32 The Council is the Board of Censors for the Society. Grievances (between a member and a non-member) or matters of ethics (between members or a member and a component society) involving a member of this Society may be presented by the councilor for the district where the action began. If possible the action is resolved at the level of the component society. The Board of Censors hears evidence, conducts further investigation when necessary, and renders a decision as rapidly as justice permits. In a disciplinary action, agreement of two-thirds of the voting members present must be obtained. The Board hears:

8.321 *Initial Action.* In these cases the Executive Committee of the Council serves as a body of evaluation for complaints, determining whether there is a proper basis for hearing by the Board. With complaints referred for hearing, the Executive Committee may issue a recommendation at its own discretion.

8.322 *Appellate Action.* In cases referred by comparable judicial bodies of component societies, the Board of Censors sits in hearing without previous Executive Committee consideration.

The Board of Censors should receive from each councilor a report of any change in membership status of members or prospective members arising from disciplinary action. The Board should send such information to a component society, another state medical society, or the American Medical Association upon request.

Action by the Board of Censors is final and subject to no appeal within this Society.

8.33 The Council is authorized to issue or revoke charters to component societies in the name of the Society. The councilor for the district of origin presents the application for charter to the Council. The application must contain the following information:

8.331 The geographical area to be included in the proposed component society.

8.332 Certification by the presiding officer of each component society within the area of the new society that his members have voted to relinquish the charter in effect.

8.333 A guarantee that all members affected will retain initial membership in the new society, but be subject to its by-laws subsequently.

8.334 The name of the new society; all to be attested by the signatures of the elected officers.

8.34 The Council shall supervise the publication of the JOURNAL OF THE KANSAS MEDICAL SOCIETY. It appoints an editorial board of five (5) members, one of whom is named Editor (*See* 10.0).

8.35 The Council is responsible for the funds and expenditures of the Society. The Treasurer submits to it a budget of estimated expenses for the coming year. Appropriation of money for special purposes not previously budgeted must be authorized by the Council.

8.36 The Council sets the amount of dues for the coming year, directing the Executive Director to inform component societies no later than October 31.

8.37 The Council may impeach elected officers and councilors.

8.38 The Council is responsible for the determination, five (5) years in advance, of the time and place of the annual session of the Society.

8.39 The Council employs and supervises the activity of the Executive Director.

8.3, 10 The President of the Society presides over the Council. In his absence the First Vice-President will preside.

8.3, 11 The Council may create committees from its membership to act between Council meetings. Special committees may include additional members of the Society who are not Council members. When the Society is invited to send a representative, or committee for service outside its own jurisdiction, the appointment(s) is made by the Council except in emergency when the Executive Committee may appoint.

8.3, 12 All money of the Society is paid to the Treasurer who is accountable for it. The Council may inspect or audit the accounts of the Treasurer at any time, but at least annually; it may review or audit the expenditure of any officer, board, or committee, and insure annual reports to the House of Delegates on all expenditures of the Society.

8.3, 13 If the office of Secretary or Treasurer is vacated, the Council appoints a successor for the unexpired term. To protect the new Treasurer, an audit is conducted at once. If a councilor position is vacated, the corresponding alternate sits as councilor until the next annual session. Then a councilor is elected as provided above to complete the three (3) year term. The alternate so seated becomes a voting member of the Council. If the incomplete term is for less than two (2) years, the elected councilor is eligible for two (2) more terms.

8.3, 14 A summary of Council activities and reports to it between sessions of the House of Delegates is submitted to the House at each annual session.

8.4 COUNCIL DISTRICTS

Council Districts are comprised as follows:

8.41 *District 1*—Atchison, Brown, Doniphan, Jackson, Jefferson, Leavenworth, Marshall and Nemaha counties.

8.42 *District 2*—Wyandotte County.

8.43 *District 3*—Johnson County.

8.44 *District 4*—Allen, Bourbon, Cherokee, Crawford, Labette, Montgomery, Neosho, Wilson and Woodson counties.

8.45 *District 5*—Clay, Geary, Pottawatomie, Riley and Washington counties.

8.46 *District 6*—Shawnee County.

8.47 *District 7*—Chase, Coffey, Lyon, Morris, Osage and Wabaunsee counties.

8.48 *District 8*—Butler, Chautauqua, Cowley, Elk and Greenwood counties.

8.49 *District 9*—Cloud, Dickinson, Jewell, Lincoln, Mitchell, Ottawa, Republic and Saline counties.

8.4, 10 *District 10*—Harvey, McPherson, Marion, Reno and Rice counties.

8.4, 11 *District 11*—Sedgwick County.

8.4, 12 *District 12*—Barber, Harper, Kingman, Pratt, and Sumner counties.

8.4, 13 *District 13*—Ellis, Ellsworth, Graham, Osborne, Phillips, Rooks, Russell, Smith and Trego counties.

8.4, 14 *District 14*—Barton, Edwards, Ness, Pawnee, Rush and Stafford counties.

8.4, 15 *District 15*—Clark, Comanche, Ford, Gray, Hodgeman, Kiowa, Meade and Seward counties.

8.4, 16 *District 16*—Cheyenne, Decatur, Gove, Logan, Norton, Rawlins, Sheridan, Sherman, Thomas and Wallace counties.

8.4, 17 *District 17*—Finney, Grant, Greeley, Hamilton, Haskell, Kearney, Lane, Morton, Scott, Stanton, Stevens and Wichita counties.

8.4, 18 *District 18*—Anderson, Douglas, Franklin, Linn and Miami counties.

8.5 NOTIFICATION OF COUNCILOR ELECTION

The Executive Director will notify all component societies in a given Council district three (3) months prior to the annual session at which its councilor term ends. A poll may be held in the district before the annual session to select the new councilor whose official election is held as provided above.

8.6 COUNCILOR TERM OF OFFICE

Each councilor is elected for three (3) years. He may serve two (2) successive terms except as limited above (8.3, 13). On one year, terms begin for councilors in districts 1, 3, 5, 8, 9, and 17; the next year in districts 2, 4, 11, 13, 14, and 15; the third year in districts 6, 7, 10, 12, 16, and 18.

8.7 DUTIES OF THE COUNCILOR

The councilor represents the members of his district in the government of the Society. He is expected to know their needs and represent them fairly. Conversely, he represents the Society to the members of his district, giving rise to some of these duties by which he is bound but not limited:

8.71 He must afford societies within his district complete understanding of Society policy and activities.

8.72 He must visit each component society in his district at least once annually.

8.73 He must function as censor and peacemaker in his district.

8.74 He must aid in improving the organization of the societies in his district for their own efficiency and to augment the proper function of this Society.

8.75 He will call a district meeting at the request of the President.

8.76 He is expected to attend meetings of the Council. If he cannot be present, he must notify his alternate who will sit in the Council for him and exercise the vote of his district. His failure to notify his alternate after two (2) consecutive absences will represent resignation and the component societies in the district will select his successor to fill the unexpired term of his appointment.

8.77 He is obliged to teach his alternate the duties of councilor, to acquaint the alternate with Council policies and procedures, and to keep him informed of current Society transactions.

9.0 Committees and Commissions

91.0 COMMISSIONS

91.1 COMPOSITION AND APPOINTMENT

Each commission is comprised of eighteen (18) members. Only one half of the membership is appointed in a single year. The chairman is appointed for one (1) year; he becomes an advisory member of the Council by his office. The commission is named by the President-Elect who announces the appointments in the last session of the House of Delegates. Members may be reappointed. A member of the Executive Committee of the Council will be assigned to work with each commission.

91.2 COMMISSION NAMES AND PURPOSES

91.21 The COMMISSION FOR SCIENTIFIC STUDY recommends and implements policies relating to pathology, anesthesiology, maternal and child health, perinatal health, conservation of eyesight, hearing and speech, control of cancer, tuberculosis and diabetes, mental health, venereal disease and other subjects proper to scientific study.

The First Vice-President will meet with this commission.

91.22 The COMMISSION FOR SOCIOLOGY AND ECONOMICS recommends and implements

policies relating to medical economics, fee schedules, industrial medicine, relations with the Bar Association, servicemen's dependents and other subjects of socio-economic nature.

The Second Vice-President will meet with this commission.

91.23 The COMMISSION FOR HEALTH SERVICES recommends and implements policies relating to public health and coroners, hospital and emergency medical care, problems of the aged, rural health, safety, welfare, relations with religion and allied groups, as well as other methods of general health of the state.

The Second Vice-President will meet with this commission.

91.24 The COMMISSION FOR EDUCATION recommends and implements policies relating to endowments, medical schools, postgraduate study, medical history, public relations, school health and other matters of professional or public education.

The First Vice-President will meet with this commission.

91.25 The COMMISSION FOR SOCIETY ORGANIZATION recommends and implements policies relating to membership and credentials, plans and scope, the Constitution and By-Laws, meeting arrangements, and other business functions of the Society.

The President-Elect and the Speaker of the House will meet with this commission.

91.3 DUTIES OF THE COMMISSION

91.31 To meet at least twice each year and more often on call of the chairman. The first meeting is called before the end of the calendar year.

91.32 To appoint committees for transaction of its business. The committee chairman must be a member of the commission, he reports for his committee at each commission meeting. The commission may dissolve its appointed committees at its discretion.

91.33 To transact business within its scope for the Society as directed by the House of Delegates, the Council, or the Executive Committee of the Council. Without directive the commission acts on its own initiative. Matters affecting Society policy are reported at the following Council meeting where approval or alteration of the action may follow the report.

91.34 To report in writing to the Executive Office no later than March 20, outlining activities and recommended legislation, by the chairman of each commission.

91.35 The President should outline his program for Society activity to guide the commissions as soon as feasible after he has assumed office.

91.4 ASSISTANCE BY THE EXECUTIVE OFFICE

The Executive Director or an Executive Assistant attends all commission meetings, taking minutes and assisting as they may be asked. When possible, the same service is extended to committee meetings.

92.0 COMMITTEES

92.1 ADVISORY COMMITTEES

92.11 Advisory committees are appointed by the President for a one-year term to assist the special groups for which they are named. Any number of members may be named; the President designates the chairman.

92.12 The Advisory Committees are:

The Committee on the Auxiliary

The Committee on Medical Assistants

The Committee on Blue Shield Relations

The Committee on State Meeting Format

For all but the latter the President-Elect shall consult with the presidents of the respective organizations prior to making his appointments. He may appoint other advisory committees as the need arises.

92.13 The Committee on State Meeting Format is comprised of the most recent general chairmen of the annual session from each city where sessions are held. The term of office ends when a new general chairman is appointed by the respective component society. The President-Elect is chairman of this committee which meets not later than sixty (60) days after each annual session in the host city for the next session. The meeting is held to review with the local planning committee plans for the coming session. The committee further recommends a general meeting plan to the host society selected for two (2) years later.

92.2 POLICY STATEMENTS

Public statements of policy by commissions or committees have only the force of recommendations, becoming Society policy after approval of the House of Delegates or the Council.

92.3 EXPENDITURES

Expenditures by commissions or committees must have prior approval of the House of Delegates or the Council to be binding on the Society. No contract or monetary obligation shall be incurred in the name of the Kansas Medical Society by any member, employee or agent until he is authorized by the House of Dele-

gates, the Council or the Executive Committee. Authorization cannot extend beyond the next annual session.

10.0 The Editorial Board

10.1 COMPOSITION AND APPOINTMENT

The Editorial Board is comprised of five (5) or more members, appointed for terms of three (3) years by the Council; no more than two (2) appointments for a complete term are made in a single year. When a vacancy occurs it is to be filled for the unexpired term at the next meeting of the Council.

10.2 DUTIES OF THE CHAIRMAN

10.21 To direct the operation of the Board.

10.22 To be the Editor of the JOURNAL OF THE KANSAS MEDICAL SOCIETY.

10.23 To make an annual report to the House of the activities of the Board and the status of the JOURNAL.

10.3 DUTIES OF THE BOARD

10.31 To edit, compile, publish and distribute all publications of this Society and make business arrangements for publication as authorized by the House of Delegates or the Council.

10.32 The Board may appoint associate editors for the JOURNAL from any or all Council districts. Associate editors will assist the Board in securing information for publication, in forwarding suggestions for improvement of the JOURNAL, and supplementing the business functions associated with publication.

10.33 The Board with its associate editors will meet each year at the annual session and at the call of the chairman.

10.34 The Board collects and records data on deaths of Society members and other non-member physicians in the state. Data is published as it is received and a compilation of the previous year's deaths is reported at the annual session.

10.4 FINANCIAL REGULATIONS

10.41 The Board is enjoined to maintain the JOURNAL as nearly self-supporting as possible, but as the official publication of the Society, it deserves the financial assistance necessary to correct a reasonable deficit. If a deficit exceeds budgeted money, a financial report is sent to the Council which may appropriate additional funds.

10.42 Accounting procedures of the JOURNAL and other publications will be kept in separate ledgers and its accounts shall be maintained apart from other Society funds.

10.43 Expenditures authorized by the Board are paid by vouchers signed by the chairman and countersigned by the managing editor or the business manager of the JOURNAL. The three signatories will be individually bonded for a sum not less than five thousand dollars (\$5,000). Certification of vouchers is submitted to the treasurer of the Society monthly.

10.44 Surplus funds accruing to the JOURNAL or other publications at the end of the fiscal year are deposited to a reserve account within limits established by the House of Delegates or the Council. Surplus funds beyond that limit will revert to the general fund of the Society.

11.0 Component Societies

11.1 DEFINITION

Component societies are groups of physicians organized in the State of Kansas, adopting principles of organization in accord with these By-Laws and receiving a charter from this Society.

11.2 CHARTER REQUIREMENTS

11.21 Each county shall be included among the component societies in this state, but only one (1) component society may be chartered in a county.

11.22 New component societies will not be chartered with fewer than ten (10) members.

11.23 Physicians in counties with too few physicians for a successful organization may affiliate with those of adjoining counties to form a multicounty component society.

11.24 Charters are granted to component societies upon action of the Council as provided above (8.33).

11.25 Following Council recommendation, the House of Delegates may revoke the charter of a component society whose actions conflict with these By-Laws.

11.3 GENERAL REGULATIONS

Component societies may set rules for membership qualification, organization and transaction of business except as specifically limited in these By-Laws.

11.4 REGULATIONS FOR MEMBERSHIP

11.41 Since membership in this Society is dependent on that of the component society, any reputable and ethical physician with a degree of Doctor of Medicine, or its equivalent, from an accredited medical school, licensed by the Kansas State Board of Healing Arts, legally registered in his county to practice, and the majority of his professional work being conducted in the state, shall have the privilege of applying for component society membership.

11.42 A physician may not hold active membership in two component societies.

11.43 No physician may be an active member of a component society without becoming a member of the Kansas Medical Society and the American Medical Association.

11.44 A physician living in one county but conducting his practice in another is eligible for membership in the county where the majority of his work is performed. He may maintain active membership for reason of convenience in the county of his residence only with the permission of the society within whose jurisdiction he practices.

11.5 MOVEMENT WITHIN THE STATE

A member of any component society, upon establishing the majority of his practice in the area of another component society, may retain his original membership only with the permission of the society into whose jurisdiction he moves.

11.6 TRANSFER OF MEMBERSHIP

A member desiring to transfer membership from one component society to another applies to the new society in the same manner as an original applicant. His application is accompanied with an appropriate recommendation and a report of his standing in the previous society, attested by the president. When the application has been acted upon, the secretary will notify the applicant at once of the society's decision. The secretary of the previous society is also notified since acceptance by the new society requires that he be dropped from the roll of previous membership. Rejection by the new society does not affect membership status in the previous society.

11.7 DUAL STATE MEMBERSHIPS

11.71 No physician shall maintain active membership in this Society or its component societies and simultaneously remain a member of another state society or of its component societies. Applying for membership in this Society is an implicit declaration of intention to resign from a corresponding organization in another state.

11.72 A physician residing in another state but performing an obvious majority of his professional work in a Kansas location is eligible for membership in this Society and of the component society where he practices. A full time teaching assignment at any Kansas state-supported school, college or institution shall be considered the major portion of his professional work.

11.73 A physician whose residence and practice circumstances lie outside the provisions of this section must set forth the particulars in writing to accompany

his application. The reviewing authority of the component society where he has applied will determine his eligibility. If he is accepted, a description of his special circumstances and a statement of acceptability is forwarded to the Executive Office by the reviewing authority. If the component societies cannot reach a decision or their conclusion is unsatisfactory, the applicant may appeal to the Council for a decision or reversal respectively. There is no appeal from the decision of the Council.

11.74 If a member of a component society changes his residence or practice location whereby his membership status may be effected, it is his responsibility to bring the change to the attention of the component societies, that they may determine his status.

11.8 THE ANNUAL REPORT

The secretary of each component society will maintain a roster of membership and of non-affiliated registered doctors of medicine within its boundaries. The roster must include for each member his address, medical college and date of graduation, date of license to practice in Kansas and the dates of past changes in membership status. Only the names and addresses of non-members need be recorded.

On or before the first day of February, the secretary shall forward a current roster to the Executive Office, including notations of death or change of membership status among members and, as far as possible, among non-members.

11.9 DUES AND ASSESSMENTS

11.91 All dues owed the Society should be remitted before the first of February of each year unless permission for a delay is secured from the President. The remittance may not be delayed beyond the first of April of the same year. Assessments are due under the same rule unless special provisions are set by the Council.

11.92 Individual checks or funds for dues to the American Medical Association are transmitted from the treasurer of the component society through the Executive Office to the proper destination.

11.93 A component society failing to pay its dues or assessments according to these By-Laws is suspended from membership in the Society until the requirements are met or until written certification of the suspension of members in arrears is received by the Executive Office. A member remaining in arrears beyond December 31 of the year in which he became delinquent shall be expelled.

11.94 A component society suspended from membership in violation of this section is not eligible collectively or individually to participate in the pro-

ceedings of this Society nor seats in the House of Delegates until the deficiency has been corrected.

11.95 Punitive action will not be instituted against a component society certifying that members in arrears have sufficient cause from illness, leave of absence, or otherwise, which prevents the practice of their profession. If the component society finds cause to waive the local dues of a delinquent member, a written account should be sent to the Executive Office. The Council will then determine whether the waiver should be properly extended to the dues of the Society. The secretary of the concerned component society will be notified of the Council decision by its district councilor.

12.0 Rules of Order

Deliberations of this Society, its Councils, Specialty Sections, Commissions and Committees shall be governed by parliamentary procedure as contained in the current *Robert's Rules of Order, Revised*, unless in conflict with the Constitution and By-Laws.

13.0 Official Statements

Memorials, resolutions or opinions of any character which conflict with policies of the House of Delegates shall not be issued in the name of the Kansas Medical Society. No obligation, oral or written, shall be incurred in the name of the Kansas Medical Society by any member, employee or agent unless the

same has been previously authorized by vote of the House of Delegates, or the Council, or the Executive Committee and no such authorization shall be extended beyond the next annual meeting of the House of Delegates.

14.0 Medical Ethics

The Principles of Medical Ethics of the American Medical Association shall govern the conduct of members.

15.0 Amendments

These By-Laws may be amended by a two-thirds majority of the House of Delegates present provided such amendment has been considered by a reference committee.

RESOLUTION OF ADOPTION

Be is hereby resolved that this revised Constitution and By-Laws shall be in full force and effect at the close of the meeting of its adoption and shall supercede all prior Constitutions, By-Laws and Amendments.

Likewise, officers, councilors, board and committee members holding offices for definite terms under the previous Constitution and By-Laws shall serve until expiration of term for which elected and until their successors, as provided by this revised Constitution and By-Laws, are duly elected, qualified and installed.



PRINCIPLES OF MEDICAL ETHICS OF THE AMERICAN MEDICAL ASSOCIATION

Preamble

These principles are intended to aid physicians individually and collectively in maintaining a high level of ethical conduct. They are not laws but standards by which a physician may determine the propriety of his conduct in his relationship with patients, with colleagues, with members of allied professions, and with the public.

Section 1

The principal objective of the medical profession is to render service to humanity with full respect for the dignity of man. Physicians should merit the confidence of patients entrusted to their care, rendering to each a full measure of service and devotion.

Section 2

Physicians should strive continually to improve medical knowledge and skill, and should make available to their patients and colleagues the benefits of their professional attainments.

Section 3

A physician should practice a method of healing founded on a scientific basis; and he should not voluntarily associate professionally with anyone who violates this principle.

Section 4

The medical profession should safeguard the public and itself against physicians deficient in moral character or professional competence. Physicians should observe all laws, uphold the dignity and honor of the profession and accept its self-imposed disciplines. They should expose, without hesitation, illegal or unethical conduct of fellow members of the profession.

Section 5

A physician may choose whom he will serve. In an emergency, however, he should render service to the best of his ability. Having undertaken the care of a patient, he may not neglect him; and unless he has

been discharged he may discontinue his services only after giving adequate notice. He should not solicit patients.

Section 6

A physician should not dispose of his services under terms or conditions which tend to interfere with or impair the free and complete exercise of his medical judgment and skill or tend to cause a deterioration of the quality of medical care.

Section 7

In the practice of medicine a physician should limit the source of his professional income to medical services actually rendered by him, or under his supervision, to his patients. His fee should be commensurate with the services rendered and the patient's ability to pay. He should neither pay nor receive a commission for referral of patients. Drugs, remedies or appliances may be dispensed or supplied by the physician provided it is in the best interests of the patient.

Section 8

A physician should seek consultation upon request; in doubtful or difficult cases; or whenever it appears that the quality of medical service may be enhanced thereby.

Section 9

A physician may not reveal the confidences entrusted to him in the course of medical attendance, or the deficiencies he may observe in the character of patients, unless he is required to do so by law or unless it becomes necessary in order to protect the welfare of the individual or of the community.

Section 10

The honored ideals of the medical profession imply that the responsibilities of the physician extend not only to the individual, but also to society where these responsibilities deserve his interest and participation in activities which have the purpose of improving both the health and the well-being of the individual and the community.

The President's Message

DEAR DOCTOR:

The Kansas Medical Society was farsighted when it joined with Blue Shield to introduce the concept of usual and customary fees paid to Kansas doctors for services to Blue Shield subscribers. The procedure was conceived well before the initiation of medicare.

Fortunately, as Title XVIII and Title XIX became the law, it was permissive for states to use existing agencies such as Blue Shield for fiscal intermediaries, and to pay physicians on this basis. This was done in Kansas. Other federal programs have since adopted the concept, so that we have now Title XVIII, Title XIX, CHAMPUS (formerly the Dependents of Servicemen Program), Vocational Rehabilitation (with slight modification), and the Hometown Veterans Program on this basis. It is possible that other third party organizations may adopt the program in the future.

This method of payment places a responsibility on each physician who participates in any of these programs to record as his fee that fee which he usually charges a solvent patient at this time who is not covered under any program. In order to assure subscribers they are paying prevailing fees it is logical for the Kansas Medical Society to develop a method to verify that the fees we charge are our usual and customary fees.



Sincerely,

A handwritten signature in dark ink, appearing to read "Leo H. Zell". The signature is fluid and cursive, with a large initial "L".

President



Editorial COMMENT

New Constitution and By-Laws

In this issue will be found the new constitution and by-laws of the Kansas Medical Society, adopted by the House of Delegates on May 3, 1967.

Physicians would be repaid for time spent in becoming acquainted with this document because it represents the structure controlling all facets of Society operation. It will explain to the individual physician the opportunities available to him to participate in activities. It describes the duties and functions of elected officers and explains committee responsibilities.

This represents the first major revision of this document in ten years, and contains numerous changes from material in the last printing. Publication in this JOURNAL is the means for making the document available to every member. It is recommended this issue be preserved for future reference.

Generic Equivalents

The government, federally and at state levels, is becoming increasingly involved in the purchase of drugs directly, or reimbursing individual beneficiaries of a variety of programs. It is quite natural that a comparable increase in attention to drug costs is now observable in congress and state legislatures. The argument of generic equality is attractive to a layman because it is easy and, on the surface, so logical that rebuttals have considerable disadvantage. The layman respects a chemical formula and is of the opinion that it can be exactly reproduced by anyone. It appears logical to him, therefore, that great savings in cost can be achieved at no sacrifice in quality.

The other side of the argument is understood by physicians, first on the basis of their education and more directly through experience. It is difficult to transmit a scientific concept in terms readily understandable that will overcome the popular belief that generic equivalents are just as good and cheaper. The American Medical Association has attempted to do this on numerous occasions to members of congress. The following are taken from a variety of sources and are presented here in the hope they may assist the physician when he is asked to discuss the subject.

Drugs generally have three names. The chemical name is the scientific and precise formula of the drug's active ingredient; the generic name is an abbreviated designation indicating the chemical or pharmacological classification of the compound; the trade or proprietary name refers to a particular manufacturer's formulation of the drug.

Generic equivalents may not be similar in, for example, the tablet form of a drug. It may contain a number of variables, such as the crystalline size, the nature of the excipients, the coloring agents and flavors, the tableting pressures, coating films, and the orientation within the tablet.

The vehicle in which the active ingredient is placed can produce varying results and, in addition, can markedly alter the shelf life of the product. This one factor alone can alter the viscosity, compatibility, stability, irritancy, and allergenicity.

A great many other simple and easily understood factors may alter a drug. The package itself is an example. A somewhat more sophisticated argument is the use of stabilizing agents which could affect the rate of absorption and greatly alter the pharmacologic

effects of the principal ingredient. Such information is not generally available and even the physician, without access to an extensive laboratory where a product can be tested, could not judge on this factor except through experience. Therefore, it is essential that the physician, in caring for a patient, make the selection of a specific drug and not just its generic equivalent. Any control over his professional judgment in this regard places the patient's well being in jeopardy and may increase the total cost of health care.

Again, should the physician be asked to discuss generic equivalents he may wish to consider the following 24 factors that can alter the pharmacologic action of a drug. They are: size of crystal or particle; form of the agent—solution vs. salt; vehicle; coatings; degree of hydration of crystal or addition of dehydrating substances to package; diluent; purity—type and number of impurities; viscosity; pH; sustained release forms; enteric coating; solubility; vehicle or base; container—stopper, type of glass, whether or not glass is preheated or impervious; package dating; quantity of active ingredient; contaminants; allergenic substances; irritation; melting point; toxicity; surface tension; storage factors; and flavoring and coloring agents.

Volunteer Physicians for Viet Nam

Milford O. Rouse, M.D., president of the American Medical Association, urges physicians once more to consider a voluntary service of 60 days in one of 18 provincial hospitals in South Viet Nam. Traveling expenses and per diem of ten dollars a day will be paid.

In the near future this program will be expanded and 50 volunteers will be required every 60 days—half in the area of medicine (general practitioners, internists, pediatricians) and half in surgery (general surgeons, orthopedic surgeons, ophthalmologists).

In the past two years during the operation of this volunteer program five physicians have served from Kansas, from a total of 300 throughout the nation. They have contributed more than 50 man years of medical care to the civilian population of South Viet Nam. This program has done much to improve the image of American medicine and the American physician. It is hoped that physicians will consider this opportunity for exceptional service and that many will inquire of the AMA for further information.

HOME FIRE SAFETY

More than 2,000 children die every year in home fires.

Yet, most of them could walk swiftly away from death if they were given the most elementary fire instructions, says *Today's Health*, the magazine of the American Medical Association.

A parent would be horrified to discover his child's school did not hold fire drills. But a child is 200 times more likely to be trapped in fire at home than at school.

Here are some pointers from *Today's Health* for setting up your own fire drills at home:

- Map out, with the children helping, two separate escape routes from each room—a main route and in case that is blocked an alternate. Main exits usually are doors and stairways. Alternates usually are windows.

- A portable ladder provides an excellent escape from upper windows. These range from an inexpensive rope ladder to those of light weight aluminum. A sturdy trellis outside a window may be ladder enough for an agile child.

- The most important lifesaving command to impress upon children is: Escape immediately. Don't let them try to put out the fire or pause to gather up possessions. Minutes, even seconds, are crucial. Fires can spread unbelievably fast. And set a specific place outside to gather promptly for a quick head count.

- If the window is jammed or frozen shut during a fire, children may not think of the obvious: break the window. Show them how to smash the pane with a loose shoe, and then run the shoe around the inside of the frame to clean off jagged edges before climbing out.

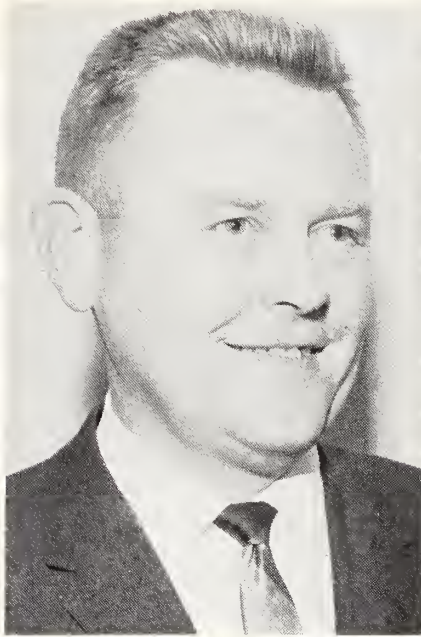
- Impress upon the children the deadliness of smoke. The majority of fire victims are asphyxiated by smoke long before the flames touch them. Warn the children against braving a smoke-filled hall, or flinging open a door and letting the smoke pour in. Wet handkerchiefs over the mouth do *not* filter out poisonous gases in smoke.

Once you work out your family fire drill, make a note on the kitchen calendar to repeat the drill at regular intervals. Some households feel once a month isn't too often.

Adults also die in home fires, and these same basic rules apply to all ages and both sexes. Practice drills will help much to reduce the natural panic that grips most folks when they realize abruptly that their house is on fire.—*AMA Health and Safety Tips*.



GEORGE F. GSELL, M.D.
President, Kansas
Medical Society



BLAIR HENNINGSGAARD, M.D.
Chairman, AMPAC Board
of Directors



NORTON L. FRANCIS, M.D.
Chairman, KaMPAC

KaMPAC Workshop

November 5, 1967

Ramada Inn, Topeka

BY YOUR SUPPORT, SHALL THEY KNOW YOU!

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| <p>8:30 LATE REGISTRATION—COFFEE AND DOUGHNUTS</p> <p>9:30 KAMPAC: 1967 MODEL—<i>Norton L. Francis, M.D., KaMPAC Chairman</i></p> <p>9:45 KMS-KAMPAC TOGETHER—<i>George F. Gsell, M.D., President, Kansas Medical Society</i></p> <p>10:00 AMPAC: 1967 MODEL—<i>Mrs. Lee Ann Elliott, Assistant Director, AMPAC</i></p> <p>10:15 SUCCESSFUL PACS GET RESULTS—<i>Blair Henningsgaard, M.D., Chairman, AMPAC Board of Directors</i></p> <p>10:45 CONGRESSIONAL DISTRICT ANALYSIS—<i>Cyril V. Black, M.D., Pratt; William R. Lentz, M.D., Topeka; Richard Schneider, M.D., Kansas City; M. Robert Knapp, M.D., Wichita; Edgar Hinshaw, M.D., Arkansas City</i></p> <p>PHYSICIANS' WIVES AND POLITICS—<i>Mrs. Warren Meyer, Wichita</i></p> <p>11:30 FILM—<i>A Congressman's Two-Year Campaign for Election</i></p> | <p>12:15 LUNCHEON</p> <p>MY FIRST CAMPAIGN FOR CONGRESS—<i>Honorable Larry Winn, Representative, Third Congressional District</i></p> <p>2:00 HOW YOU CAN WORK WITH YOUR POLITICAL PARTY—<i>Thomas J. Corcoran, Democratic National Committeeman From Kansas, and McDill "Huck" Boyd Republican National Committeeman From Kansas</i></p> <p>3:00 GEARING UP FOR 1968</p> <p>Panel: <i>Norton L. Francis, M.D., Moderator</i></p> <p><i>Blair Henningsgaard, AMPAC Director</i></p> <p><i>Mrs. Francis Neighbor, President, Woman's Auxiliary</i></p> <p><i>James A. McClure, M.D., Past President, Kansas Medical Society</i></p> <p><i>Frank Coulter, KaMPAC Board</i></p> <p><i>Mrs. Lee Ann Elliott, AMPAC Assistant Director</i></p> <p><i>Mr. William K. Alexander, AMPAC Field Representative</i></p> |
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Report of the Council

Summary of Meeting Held September 24, 1967

The Council met on Sunday, September 24, 1967, at the Ramada Inn, Topeka, beginning at 10:00 a.m.

Present were Dr. G. F. Gsell, President; Drs. D. L. Berger, V. E. Brown, J. W. Butin, F. T. Collins, R. F. Conard, E. W. Crow, R. H. Hill, R. W. Hughes, J. G. Lee, Jr., J. W. Manley, J. J. Marchbanks, J. A. McClure, L. R. Pyle, W. G. Rinehart, Alex Scott, E. T. Siler, B. G. Smith, L. N. Speer, M. O. Steffen, and F. P. Wolff. Also present were Drs. H. C. Blaylock, T. P. Butcher, O. R. Clark, H. F. Coulter, M. C. Eddy, N. L. Francis, R. M. Glover, K. L. Graham, M. R. Knapp, R. C. Knappenberger, C. M. Lessenden, William Nice, W. R. Roy, I. J. Waxse, Hugh Dierker, Jack Walker, George Wolf, and G. W. Getz. Also present were Mr. Bob Moffat and Mr. Bill Farrar, representing the K. U. Chapter of SAMA; Mrs. Martha Hunt, Mr. R. E. Selbach, Mr. Sam Barham, Mr. Proctor Redd, Mr. R. G. Swenson and Mr. O. E. Ebel.

The following is a brief report of the subjects discussed and approved by the Council. The complete minutes are on file in the Executive Office.

1. Approved the appointment of Dr. Lucien R. Pyle as Treasurer until the next session of the House of Delegates.

2. Approved the motion that the dues of the Society for 1968 remain at the present level of \$50.

3. Accepted the recommendations of the Format Committee and program for the 1968 Annual Session.

4. Authorized the Editorial Board to study the offer from the Xerox Corporation to microfilm the JOURNAL, and make whatever decision the Board felt would be best.

5. Approved the policy statement with reference to nursing services, which had been adopted previously by the Kansas State Nurses Association and the Kansas Hospital Association.

6. Reaffirmed support of the AMA resolution approving diploma schools of nursing and requested this be taken to the Kansas House of Delegates for approval.

7. Recommended that at the next Annual Banquet each living past president be presented a wall plaque and that in the future a plaque be given to each past president instead of the Past President's key.

8. Requested that a message of condolence be prepared by the Executive Committee and sent to Mrs. J. Gordon Claypool.

9. Approved the appointment of Dr. Norton Francis as chairman of KaMPAC.

10. Plans for a new program of prepaid drug expenses which was being negotiated with the Kansas Pharmaceutical Association and had been approved by the Kansas Blue Shield Board of Directors, subject to confirmation by the Society, was explained by Mr. Sam Barham of Blue Shield. After some discussion, the subject was tabled for the present.

11. A statement adopted by Blue Shield Board of Directors, requesting that the Medical Society accelerate efforts to prepare a recommended program of verification of physicians charges, that a special House of Delegates meeting be called early in 1968, and that the Society prepare a statement of principles relating to the ethics of charging practices was presented by Mr. Proctor Redd of Blue Shield. Dr. Gsell then distributed a resolution for Council consideration on the verification of charges. The resolution expressed certain principles and directed a committee of the Society to prepare details in consultation with Blue Shield, after which recommendations would be submitted to the House of Delegates.

A motion was made and seconded that this subject be presented to various committees and that they submit their recommendations to the Executive Committee, who will consider the subject as a whole before determining whether a House of Delegates meeting shall be called.

12. Approved a voluntary program for professional assistance from KUMC in the handling of patients with epilepsy, whereby a team of specialists would assist the local physician, if requested, and make recommendations with reference to the treatment of the patient.

13. Requested the President write a letter to the five Congressmen thanking them for their efforts in the deletion of Section 12 of HR-6418, the Partnership in Health bill.

14. Approved the motion that the Council request the Medical Representative to KHFIS to be present and report to each regular Council meeting on the activities of that organization.

The following contributions were approved:

1. The purchase of a quarter page advertisement relating to health careers in the *Kansas 4-H Journal*.

2. Contribution of \$500 to the Kansas School Health Council.

(Continued on page 421)



Personalities—IN KANSAS MEDICINE

Thomas Taylor, Phillipsburg, and Charles E. Lewis, Kansas City, have been appointed to the Comprehensive Health Planning Council by Governor Docking. The council is designed to coordinate identification of state health problems and needs.

Howard V. Bair, superintendent and medical director of the Parsons State Hospital and Training Center, began a four-month sabbatical leave the first of September. Dr. Bair will travel extensively in Europe as a consultant at facilities for the mentally retarded.

A citywide Health Fair will be held in Topeka in November, under the sponsorship of the Shawnee County Medical Society and Auxiliary. Donald Pierce has been appointed chairman of the fair by William R. Roy, president of the Shawnee County Medical Society.

Ali Baser, Leavenworth, is the new director of the Northeast Kansas Guidance Center.

The residents of Sedgwick gave special recognition to Edison S. Hymer during the Fall Festival day celebration last month. Dr. Hymer, who has spent most of his 62 years in medical practice in Sedgwick, was presented an engraved wrist watch by the president of the Sedgwick Boosters Club in behalf of the citizens of the community.

New officers of the Stormont-Vail Hospital in Topeka are, H. G. Kroll, president; R. R. Beach, vice-president and president-elect, and R. T. Cotton,

secretary-treasurer. C. S. Joss was elected to the executive committee.

Michael J. McKenna has joined James Basham in practice in Fort Scott. Dr. McKenna, a native of Kingman, recently completed two years in the Navy.

Harry Custer and family moved from Colby to Manistee, Michigan, in September.

Steven S. Fountain, Lindsborg, has been elected to active membership by the American Academy of General Practice.

James L. Diacon, Wellington, was the featured speaker for a program on arthritis, sponsored by the Sumner County Arthritis Committee. The program was held in Wellington in September.

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CLINICAL MANAGEMENT OF BEHAVIOR DISORDERS IN CHILDREN by Harry Bakwin and Ruth Morris Bakwin (3rd edition). W. B. Saunders Company, Philadelphia, 1966. 652 pages illustrated. \$14.50.

This is a good book that deserves a place on the library shelf of every physician who handles children in his practice. This third edition, according to the authors, follows the general plan of the previous ones but much new data and material have been added. So, the excellence of the text will come as no surprise to those who have used the previous editions.

The presentation of the material is outstanding in its clarity. The usual jargon and terminology of the psychiatrist and psychologist are not often used even though the material presented is concerned with the mind and behavior. The authors very succinctly present the whole array of behavior problems in a manner which can be understood by the practicing physician. This is probably due to the fact that the text is written by clinical pediatricians.

Another unique feature is that the text can be used both as a rather complete treatise on a problem and as a quick reference. The structure is such that each section has a short outline, the material, and then a very generous bibliography. Thus a very adequate discussion is available for a rapid review and yet the reader is able with the many references to pursue the problem at greater length. From the information in the text, however, I believe that the practicing physician would find most of the information adequate.

The contents are so presented in sequence that the reader is carried from Part One on "Growth and Development" through Part Twelve on "Specific Syndromes," such as schizophrenia, hysteria and accident proneness. One is continually impressed with the fact that the topics are handled by authors who have the skill and knowledge to present very complicated material in a practical manner. The physician will find most of the information useful, and most of the suggestions and recommendations can be put into use quite easily.

The authors seem to have covered the most significant disorders of behavior and the emotions. They have not forgotten to state the expected normal basic behavior and attitudes that come with growth and development.

Although most general texts in pediatrics may contain some of the same information, this text is still a good purchase for those who see many children. It is recommended as a well written book which deals with many complicated problems in a clear, practical manner.—*H.P.J.*

CONDITION CRITICAL: OUR HOSPITAL CRISIS by Edwin P. Hoyt. Holt, Rinehart and Winston, Inc., New York City, 1966. 264 pages. \$5.95.

This book, written by a layman for lay readers, describes in rather vivid terms many of the difficulties that hospitals today are experiencing. The author places emphasis on the results to the patient of such various hospital problems as: shortage of qualified hospital personnel, hospital financing, hospital charging and billing systems, and conflicts between hospitals and physicians. While in the main it would appear the author had thoroughly researched and documented the facts which he presents, he is inclined to make rather sweeping statements such as: "In order to be used on a continuing basis, an operating room must have a complete duplicate set of instruments. . . . Nearly *no* American hospitals had such duplicate sets in 1965." The author has used actual hospital accidents and incidents to illustrate his thesis that "Americans are counted among the world's medically underprivileged. . . ." He has written the book to shock the American public, and it must be admitted that the facts, figures, and cases he presents are shocking. What the author does not present is a course of action designed to alleviate the problems he describes. This book should be recommended reading for those entering or working in the hospital, medical or paramedical professions, if for no other reason than it represents the public's concern with medical care.—*C.L.M.*



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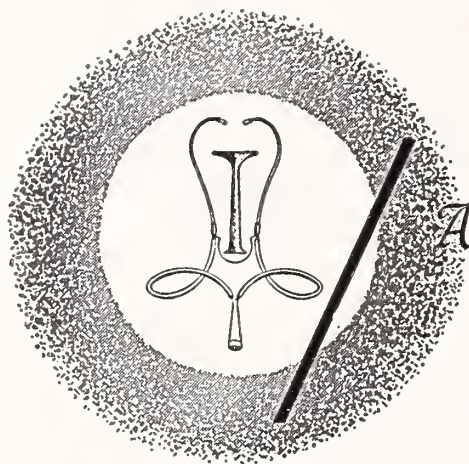
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Announcements

Professional meetings, conferences, and postgraduate courses of national importance are listed for the Doctor's Calendar. Notice of the session is posted in advance to allow the physician time to make preparations.

A new drug, Fenclonine, which inhibits serotonin synthesis is being evaluated for its effectiveness in the therapy of the symptoms of the carcinoid syndrome. Physicians interested in having patients with malignant carcinoid considered for this therapy may write Daniel L. Azarnoff, M.D., Clinical Pharmacology Study Unit, University of Kansas Medical Center, Kansas City, Kansas 66103, or telephone collect, ADams 6-5252, Ext. 373 (area code 913).

OCTOBER

Oct. 21-26 American Academy of Pediatrics, Washington Hilton Hotel, Washington, D. C. Write the American Academy of Pediatrics, 1801 Hinman Avenue, Evanston, Illinois 60204.

Oct. 29-
Nov. 1 American College of Gastroenterology, Biltmore Hotel, Los Angeles. Following the convention a three-day course in Postgraduate Gastroenterology will be held at the Biltmore. Contact the Secretary, American College of Gastroenterology, 33 W. 60th Street, New York City 10023.

NOVEMBER

Nov. 2-4 American College of Gastroenterology, annual course in postgraduate gastroenterology, Biltmore Hotel, Los Angeles. For information write the American College of Gastroenterology, 33 W. 60th Street, New York City 10023.

Nov. 12-17 American Association for Inhalation Therapy, Statler Hilton Hotel, Los Angeles. Write the Executive Secretary, A.A.I.T., 332 S. Michigan Avenue, Room 904, Chicago 60604.

Nov. 16-19 National Society for Crippled Children and Adults, Central Plaza Hotel, Los Angeles. Write Kay Bauer, Dir. of Pub-

lic Relations, 2023 W. Ogden Avenue, Chicago 60612.

Nov. 25 AMA Conference on Utilization Review—*Problems and Promise*, Shamrock Hilton, Houston. Contact: AMA, Dept. of Hospitals and Medical Facilities, 535 N. Dearborn, Chicago 60610.

Nov. 26-29 AMA 21st Clinical Convention, Astorhall, Houston. Exec. Vice President: F. J. L. Blasingame, M.D., 535 N. Dearborn, Chicago 60610.

Nov. 26 AMA National Conference on Medical Aspects of Sports, Hotel Americana, Houston. Contact: AMA, Committee on the Medical Aspects of Sports, 535 N. Dearborn, Chicago 60610.

DECEMBER

Dec. 6-8 Kansas City Society of Ophthalmology and Otolaryngology, Plaza Inn Motel, Kansas City, Missouri. Guest speakers include John Dyer, M.D., Rochester; Richard Buckingham, M.D., Park Ridge, Illinois; Joseph Goldman, M.D., Mount Sinai, New York; and Leslie Bernstein, M.D., University of Iowa. Write: Samuel Kantor, M.D., Suite 428, Rockhill Medical Building, 6700 Troost, Kansas City, Missouri 64131.

POSTGRADUATE COURSES

University of Colorado:

Nov. 1-3 *Fractures and Joint Injuries*

Nov. 6-10 *Clinical Chemistry*

Dec. 6-8 *Modern Concepts of Allergy*

For further information, write the Office of Postgraduate Medical Education, University of Colorado School of Medicine, 4200 E. Ninth Avenue, Denver 80220.

University of Kansas:

Oct. 24-25 *Medicine and Religion*

For further information write the Department of Postgraduate Medical Education, University of Kansas School of Medicine, 39th and Rainbow Boulevard, Kansas City, Kansas 66103.

University of Nebraska:

Oct. 20-21 *Pediatric-Obstetric Neonatology Conference*Nov. 2 *Institute for Medical Secretaries*Nov. 4 *Institute for Teaching Medical Technologists*Nov. 16 *Institute for Physical Therapists*Dec. 8-9 *Infectious Diseases and Immunology*

For further information write the Department for Continuing Education, University of Nebraska College of Medicine, Omaha.

Hahnemann Medical College and Hospital:

Nov. 13-14 *Current View of Congestive Heart Failure*Nov. 17-18 *Human Sexual Function and Dysfunction*

For further information write the Department of Postgraduate Education, Hahnemann Medical College and Hospital, 230 N. Broad Street, Philadelphia 19102.

Nov. 8-11

Treatment of Skeletal and Soft Tissue Injuries, American Academy of Orthopaedic Surgeons, Marriott Motor Hotel, Dallas. Contact: Charles F. Gregory, M.D., University of Texas, Southwestern Medical School, 5323 Harry Hines Boulevard, Dallas 75235.

Nov. 6-17

Laryngology and Bronchoesophagology, sponsored by the Department of Otolaryngology, Illinois Eye and Ear Infirmary and the College of Medicine, University of Illinois. Limited to 15 physicians. Interested registrants write directly to the Department of Otolaryngology, College of Medicine, University of Illinois at the Medical Center, P.O. Box 6998, Chicago 60680.

Council Meeting*(Continued from page 416)*

3. \$500 to KaMPAC to be used for Educational purposes only.

4. Payment of annual dues of \$100 charged each state having one or two AMA delegates, for an organization known as Aces and Deuces.

5. Payment of annual dues of \$100 to the Kansas State Chamber of Commerce.

6. \$2,000 to the support of KHFIS for one year.

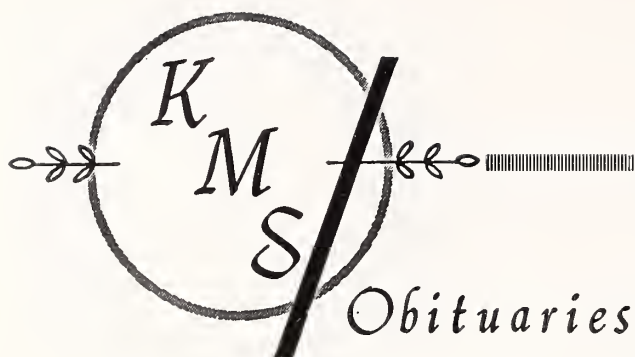
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GUEST SPEAKERS

- Honorable Larry Winn, Representative, 3rd Congressional District
- Thomas J. Corcoran and McDill "Huck" Boyd, National Committeemen of the Democratic and Republican parties
- Blair Henningsgaard, M.D., Chairman, AMPAC Board
- Lee Ann Elliott, Assistant Director, AMPAC



NORMAN W. ANDERSON, M.D.

Dr. Norman W. Anderson, 63, director of the Medical Care Division of the Kansas State Department of Health, died at his home in Topeka on September 11, 1967.

He was born in Minneapolis, Minnesota, on July 7, 1904, and had lived in Topeka since 1960. After receiving his medical degree from the University of Minnesota School of Medicine in 1930, Dr. Anderson entered the Army Medical Corps and held the rank of colonel when he retired in 1960. He was a member of the board of directors of the Kansas Heart Association and other medical and fraternal organizations.

Survivors include his wife and three daughters.

CARLTON B. GRISSOM, M.D.

Dr. Carlton B. Grissom, M.D., retired Syracuse physician, died on August 29, 1967, at the Hamilton County Hospital. He was 76 years old.

Dr. Grissom was born November 25, 1890, in Stanton County, Kansas. He was graduated from Rush Medical College in Chicago in 1917. After serving with the Army during World War I, Dr. Grissom returned to Syracuse and began his medical practice there in 1919, retiring in 1961 after 42 years of service in that community.

Dr. Grissom is survived by two sons.

DAVID E. KISECKER, M.D.

Dr. David Kisecker, 95, Caldwell, died on September 3, 1967, in a Caldwell hospital. He had been city health officer and a resident of the Caldwell community for 65 years.

He was born on October 28, 1871, at Greencastle, Pennsylvania, and graduated from the University of Illinois School of Medicine in 1901. He came to Caldwell in 1902 to start his practice and was active until his final illness.

Dr. Kisecker is survived by his wife and two daughters.

CHESTER H. LOCKWOOD, M.D.

Dr. Chester H. Lockwood, 84, Anthony, died on August 24, 1967.

Dr. Lockwood was born on April 15, 1883, at Anthony. He was a graduate of Fairmount College, Wichita, and received his doctor of medicine degree from Rush Medical College, Chicago, in 1907. He was an eye specialist in Chicago and taught at Northwestern University in Chicago for 25 years. Dr. Lockwood returned to Anthony after his retirement in 1950.

Survivors include his wife and two sons.

GEORGE MANDEVILLE, M.D.

Dr. George Mandeville died at his home in Dodge City on August 10, 1967, at the age of 66.

He was born on August 5, 1901, in Harper County, Kansas, and received his degree in medicine from the University of Kansas School of Medicine in 1938. He practiced at the Hertzler Clinic in Halstead for three years, and after serving in the U. S. Army during World War II, he began his practice in Spearville. In 1960 he moved to Dodge City, but continued his practice in Spearville, serving that community for 22 years.

He is survived by his wife, four daughters and a son.

The Kansas Medical Society—1967-1968

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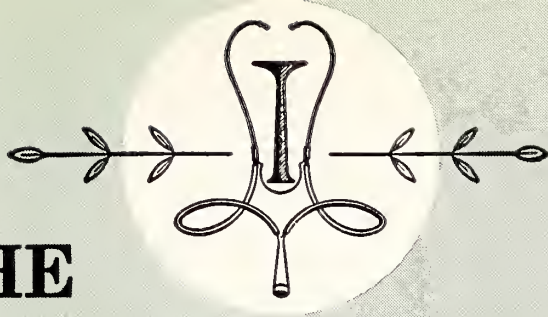
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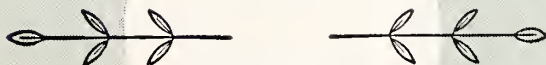
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References:

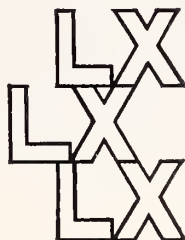
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The JOURNAL of the KANSAS MEDICAL SOCIETY

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Consider starting your hypertensives on this basic thiazide



A single daily dose of Enduron provides sodium excretion around the clock

Enduron is a true 24-hour single-dose thiazide. Its sodium excretion is not squeezed into an abrupt peak during the first several hours. It is well-sustained in a plateau-like effect—with little reduction for the first 12 hours, and decline thereafter only gradual.

Potassium loss, by contrast, is low. It reaches an early minor peak, then subsides rapidly. Moreover, since dosage is but once a day, there is but one daily peak of potassium loss. As with all thiazides, however, dietary potassium supplementation should also be considered, especially in long or intensive therapy.

Use Enduron as an ideal starting therapy in mild hypertension. Use it too, as a basic therapeutic building block with which other agents can be joined, for managing your more resistant hypertensives.

Once a day, every day

ENDURON[®]
METHYCHLOTHIAZIDE



	Minimum	Usual	Intermediate	Maximum
DAILY DOSAGE RANGE	 2.5 mg. tablet	 5 mg. tablet	 7.5 mg.	 10 mg.

See Brief Summary on final page of advertisement.

To build added response, shift to Enduronyl



The deserpidine component adds enhanced antihypertensive activity

The rauwolfia component of Enduronyl is deserpidine (Harmony[®]), a purified crystalline alkaloid supplied only by Abbott. It augments Enduron with its own antihypertensive and tranquilizing action.

Thus the combined clinical effect of these two therapeutic building blocks in Enduronyl is greater than can ordinarily be achieved with either alone.

To add flexibility, Enduronyl comes in two strengths: regular and Forte. Both provide 5 mg. of Enduron. The variation is where most helpful: in the deserpidine. The tablets are scored, and give a surprisingly wide and economical choice of once-a-day doses (see below).

Choose Enduronyl for your patients in the broad range of mild to moderate hypertension. Patient acceptance is excellent!

Once a day, every day









ENDURONYL[®]

METHYCHLOTHIAZIDE 5 MG. WITH DESERPIDINE 0.25 MG.

ENDURONYL FORTE

METHYCHLOTHIAZIDE 5 MG. WITH DESERPIDINE 0.5 MG.



	Minimum	Usual	Intermediate	Maximum
DAILY DOSAGE RANGE	 2.5 mg. methyclothiazide 0.125 mg. deserpidine	 5 mg. methyclothiazide 0.25 mg. deserpidine	 7.5 mg. methyclothiazide 0.375 mg. deserpidine	 10 mg. methyclothiazide 0.5 mg. deserpidine
DAILY DOSAGE RANGE	 2.5 mg. methyclothiazide 0.25 mg. deserpidine	 5 mg. methyclothiazide 0.5 mg. deserpidine	 7.5 mg. methyclothiazide 0.75 mg. deserpidine	 10 mg. methyclothiazide 1 mg. deserpidine

See Brief Summary on final page of advertisement.

Eutonyl affords a different kind of basic therapy for moderate to severe cases



Effect tied to reduced peripheral vascular resistance; no central depressant action

Eutonyl is a unique nonhydrazine agent. It is reported to act by reducing peripheral vascular resistance.^{1,2}

In clinical trials, significant reductions in mean blood pressure were seen in 84% of patients studied—all were moderate to severe cases. Eutonyl lowers diastolic in proportion to systolic, and in about half of the cases studied, reductions in the sitting and recumbent positions were nearly as great as in the standing position.





Most important: There is no central depressant action. In fact, some patients reported an *increased* sense of well being.

Here, then, is a highly effective *basic treatment* for moderate to severe cases—and one that will not hamper your patient with lethargy or drowsiness while on treatment.

Once a day, every day

EUTONYL®
PARGYLINE HYDROCHLORIDE



DAILY DOSAGE RANGE	Minimum	Usual starting	Intermediate	Maximum
				
	10 mg. tablet	25 mg. tablet	50 mg. tablet or as needed	200 mg.

1. Brest, A. N., et al., Cardiac and Renal Hemodynamic Response to Pargyline, Ann. N. Y. Acad. Sci., 107-1016, 1963.
2. Winsor, T., Pargyline Hydrochloride, Hypertension, Urinary Tryptamine, and Vascular Reflexes, Geriatrics, 19:598, Aug., 1964.

See Brief Summary on final page of advertisement.

Eutron adds thiazide for enhanced therapy with milder side effects



Only a 7/4 mm. span between standing and recumbent pressures in clinical trials—reduced chance of orthostatic hypotension

The combining of Eutonyl and Enduron in Eutron permits a significantly greater antihypertensive effect than with either agent used alone. This in turn may allow therapeutic success with lesser dosage—and correspondingly milder side effects.




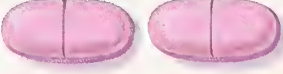
A significant finding in clinical trials was the drug's action in lowering blood pressure to *nearly equal levels in all body positions*. Total average spread between standing and recumbent readings (after treatment) was only 7/4 mm. Hg.

Thus, in your moderate to severe cases, Eutron affords a usually smooth course of therapy, often with reduced likelihood of orthostatic effects. (The usual precautions against rising suddenly, of course, will always apply.) And, because of the thiazide component, Eutron may be used in the presence of congestive heart failure.

Once a day, every day

EUTRON™
PARGYLINE HYDROCHLORIDE 25 MG.
WITH METHYCHLOTHIAZIDE 5 MG.



	Minimum	Usual starting	Intermediate	Maximum
DAILY DOSAGE RANGE	 <p>12.5 mg. pargyline hydrochloride and 2.5 mg. methyclothiazide</p>	 <p>25 mg. pargyline hydrochloride and 5 mg. methyclothiazide</p>	 <p>37.5 mg. pargyline hydrochloride and 7.5 mg. methyclothiazide</p>	 <p>50 mg. pargyline hydrochloride and 10 mg. methyclothiazide</p>

ENDURON[®] | ENDURONYL[®]

METHYCHLOTHIAZIDE

Each tablet contains
Methyclothiazide 5 mg. with
Deserpidine 0.25 mg. or 0.5 mg.

Indications: Enduron is used to control edema and mild to moderate hypertension; also used with other drugs for hypertension. Enduronyl is used in mild to moderately severe hypertension; when used with Enduronyl, more potent agents can be given at reduced dosage to minimize undesirable side effects.

Contraindications: Neither Enduron nor Enduronyl should be used in severe renal disease (except nephrosis) or shutdown; in severe hepatic disease or impending hepatic coma; in patients sensitive to thiazides. Hepatic coma has been reported as a result of hypokalemia in patients receiving thiazides.

Enduronyl is contraindicated in patients with severe mental depression and suicidal tendencies, active peptic ulcer, or ulcerative colitis.

Warnings: Consider possible sensitivity reactions in patients with a history of allergy or asthma. If added potassium intake is indicated, dietary supplementation is recommended. Enteric-coated potassium tablets should be reserved for cautious use only when adequate dietary supplementation is not practical because those tablets may induce serious or fatal small bowel lesions consisting of stenosis with or without ulceration. These small bowel lesions have caused obstruction, hemorrhage and perforation frequently requiring surgery. Medication should be discontinued immediately if abdominal pain, distension, nausea, vomiting or GI bleeding occurs.

Precautions: Use thiazides with caution in severe renal dysfunction, impaired hepatic function, or progressive liver disease. In surgical patients, thiazides may reduce the response to vasopressors and increase the response to tubocurarine. Use thiazides with caution in pregnancy (bone marrow depression, thrombocytopenia, or altered carbohydrate metabolism have been reported in certain newborn infants). Also reported have been: blood dyscrasias including thrombocytopenia with purpura, agranulocytosis and aplastic anemia; elevations of BUN, serum uric acid, or blood sugar. Symptomatic gout may be induced. Antihypertensive response may be enhanced following sympathectomy.

Use Enduronyl with caution in patients with a history of peptic ulcer, as rauwolfias may increase gastric secretion. Discontinue at the first sign of mental depression. Rauwolfia alkaloids may increase hypotensive effects of surgery or anesthesia, and should be discontinued two weeks prior. They also lower the convulsive threshold and shorten seizure latency. In epilepsy, dosage adjustment of anticonvulsant medication may be necessary. Alcohol, barbiturates, or narcotics may potentiate action of deserpidine.

Adverse Reactions: During intensive or prolonged therapy, guard against hypochloremic alkalosis and hypokalemia (especially the latter if patient is on digitalis). All patients should be observed for signs of hyponatremia ("low-salt" syndrome). Reported thiazide reactions include: anorexia, nausea, vomiting, diarrhea, headache, skin rash, dizziness, paresthesia, weakness, photosensitivity, jaundice, and pancreatitis.

Reported rauwolfia reactions include: nasal stuffiness, nausea, weight gain, diarrhea, aggravation of peptic ulcer, epistaxis, skin eruption, and reduction of libido and potency. Excessive drowsiness, fatigue, weakness, and nightmares may signal early signs of mental depression.

EUTONYL[®] | EUTRON[™]

PARGYLINE HYDROCHLORIDE

Each tablet contains
Pargyline Hydrochloride 25 mg.
with Methyclothiazide 5 mg.

Indications: For treatment of patients with moderate to severe hypertension, especially those with severe diastolic hypertension. Not recommended for patients with mild or labile hypertension amenable to therapy with sedatives and/or thiazide diuretics alone. It is desirable to establish the dosage of Eutron by administering component drugs separately.

Contraindications: Pheochromocytoma, advanced renal disease, increasing renal dysfunction, paranoid schizophrenia and hyperthyroidism. Hepatic coma has been reported as consequence of hypokalemia with thiazide therapy. Until further experience is gained not recommended for patients with malignant hypertension, children under 12, or pregnant patients.

Concomitant use of the following is contraindicated: other monoamine oxidase inhibitors; parenteral forms of reserpine or guanethidine; sympathomimetic drugs; foods high in tyramine such as cheese; imipramine and amitriptyline, or similar antidepressants; methyldopa. 2 week interval should separate therapy and use of these agents.

Methyclothiazide is contraindicated in patients with known sensitivity to thiazides.

Warnings: Pargyline hydrochloride is a monoamine oxidase inhibitor. Warn patients against eating cheese, and using alcohol, proprietary drugs or other medication without the knowledge of the physician. When indicated, alcohol, narcotics (meperidine should be avoided), antihistamines, barbiturates, chloral hydrate, and other hypnotics, sedatives, tranquilizers, or caffeine, may be used cautiously in reduced dosage. In emergency surgery $\frac{1}{4}$ to $\frac{1}{5}$ the usual dose of narcotics, analgesics, and other premedications should be used avoiding parenteral administration where possible. Carefully adjust dose of anesthetics to response of patient. Withdraw pargyline two weeks before elective surgery.

Warn patients about the possibility of postural hypotension. Those with angina or coronary artery disease should not increase physical activity with an improvement in well being. Pargyline may lower blood sugar.

Avoid use of enteric-coated potassium tablets, as these may induce serious or fatal small-bowel lesions consisting of stenosis with or without ulceration. These small-bowel lesions have caused obstruction, hemorrhage and perforation frequently requiring surgery. Medication should be discontinued immediately if abdominal pain, distension, nausea, vomiting or GI bleeding occurs. These products contain no added potassium salts and if added potassium intake is desired, dietary supplementation is recommended. Coated potassium tablets should be reserved for cautious use when adequate dietary supplementation is impractical. In patients with a history of allergy or asthma the possibility of sensitivity reactions should be considered.

Precautions: Measure blood pressure while patient is standing to determine antihypertensive effect. Use with caution in hyperactive or hyperexcitable persons. Such persons may show increased restlessness and agitation. Withdraw drug during acute febrile illness. Watch patients with impaired renal function for increasing drug effects or elevation of BUN and other evidence of progressive renal failure; withdraw drug if such alterations persist and progress. Use with caution in patients with liver disease. As with all new drugs, complete blood counts, urinalyses, and liver function tests should be performed periodically. With prolonged therapy, examine patients for change in color perception, visual fields and fundi. Also reported have been: blood dyscrasias including thrombocytopenia with purpura, agranulocytosis and aplastic anemia; elevations of BUN, serum uric acid, or blood sugar. Symptomatic gout may be induced. In surgical patients thiazides may reduce response to vasopressors and increase response to tubocurarine.

Adverse Reactions: Pargyline may be associated with orthostatic hypotension. Mild constipation, slight edema, dry mouth, sweating, increased appetite, arthralgia, nausea and vomiting, headache, insomnia, difficulty in micturition, nightmares, impotence, delayed ejaculation, rash, and purpura have been encountered with pargyline. Hyperexcitability, increased neuromuscular activity (muscle twitching) and other extrapyramidal symptoms have been reported in a few patients with reduced cardiac reserve.

During intensive or prolonged therapy, guard against hypochloremic alkalosis and hypokalemia (especially the latter if patient is on digitalis). Observe all patients for signs of hyponatremia ("low salt" syndrome).

Reported thiazide reactions also include anorexia, nausea, vomiting, diarrhea, headache, dizziness, paresthesia, weakness, skin rash, photosensitivity, jaundice, and pancreatitis. Nocturia has been observed with the combination.



709075R



Diagnosis:

cystitis?
pyelonephritis?
pyelitis?
urethritis?
prostatitis?

in any case,
usually gram-negative*

Therapy:

two 500 mg. Caplets® q.i.d.
(initial adult dose)

Indications: Urinary tract infections caused by gram-negative and some gram-positive organisms.

Side effects: Mainly mild, transient gastrointestinal disturbances; in occasional instances, drowsiness, fatigue, pruritus, rash, urticaria, mild eosinophilia, reversible subjective visual disturbances (overbrightness of lights, change in visual color perception, difficulty in focusing, decrease in visual acuity and double vision), and reversible photosensitivity reactions. Marked overdosage, coupled with certain predisposing factors, has produced brief convulsions in a few patients.

Precautions: As with all new drugs, blood and liver function tests are advisable during prolonged treatment. **Pending further experience, like most chemotherapeutic agents, this drug should not be given in the first trimester of pregnancy. It must be used cautiously in patients with liver disease or severe impairment of kidney function.** Because photosensitivity reactions have occurred in a small number of cases, patients should be cautioned to avoid unnecessary exposure to direct sunlight while receiving NegGram, and if a reaction occurs, therapy should be discontinued. The dosage recommended for adults and children should not arbitrarily be doubled unless under the careful supervision of a physician. Bacterial resistance may develop.

When testing the urine for glucose in patients receiving NegGram, Clinistix® Reagent Strips or Tes-Tape® should be used since other reagents give a false-positive reaction.

Dosage: Adults: Four Gm. daily by mouth (2 Caplets® of 500 mg. four times daily) for one to two weeks. Thereafter, if prolonged treatment is indicated, the dosage may be reduced to two Gm. daily. Children may be given approximately 25 mg. per pound of body weight per day, administered in divided doses. The dosage recommended above for adults and children should not arbitrarily be doubled unless under the careful supervision of a physician. Until further experience is gained, infants under 1 month should not be treated with the drug.

How supplied: Buff-colored, scored Caplets® of 500 mg. for adults, conveniently available in bottles of 56 (sufficient for one full week of therapy) and in bottles of 1000. 250 mg. for children, available in bottles of 56 and 1000.

References: (1) Based on 23 clinical papers, 1512 cases. Bibliography on request. (2) Bush, I. M., Orkin, L. A., and Winter, J. W., in Sylvester, J. C.: Antimicrobial Agents and Chemotherapy—1964, Ann Arbor, American Society for Microbiology, 1965, p. 722.

NegGram®
Brand of
nalidixic acid
a specific anti-gram-negative

eradicates most urinary
tract infections...

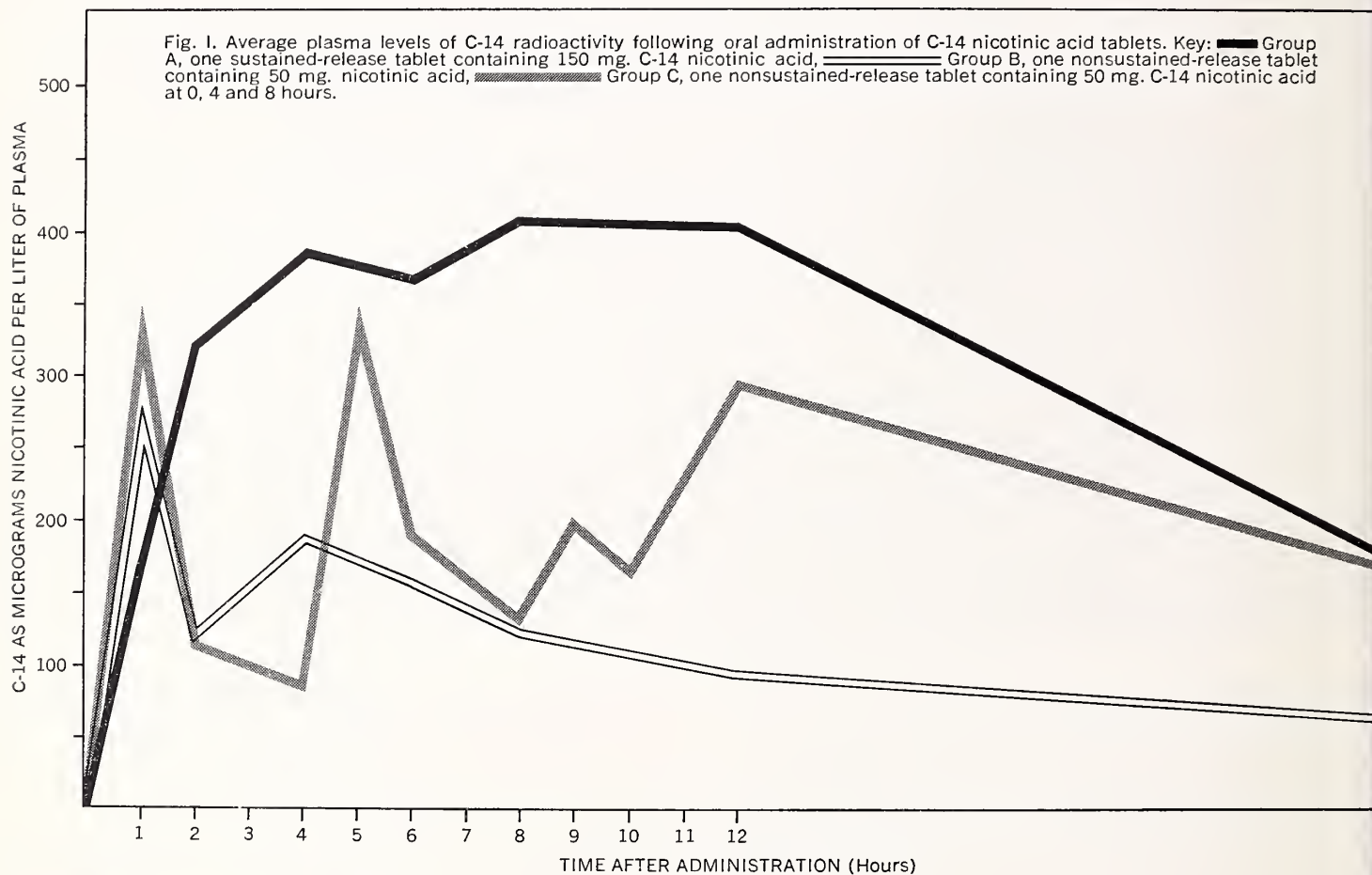
- Low incidence of untoward effects; no fungal overgrowth, crystalluria, ototoxic or nephrotoxic effects have been observed.
- "Excellent" or "good" response reported in *more than 2 out of 3* patients with either chronic or acute gram-negative infections.¹

*As many as 9 out of 10 urinary tract infections are now caused by gram-negative organisms: *E. coli*, *Klebsiella*, *Aerobacter*, *Proteus*, *Paracolon* or *Pseudomonas*.²... However, infections of the urethra and prostate caused by non-gonococcal gram-negative organisms are believed to be less prevalent.

Winthrop

Winthrop Laboratories, New York, N. Y. 10016

Sustained circulatory, respiratory and cerebral stimulation for the



(fewer absent doses by
absent-minded patients)

Human volunteer subjects were administered Geroniazol TT tablets with the nicotinic acid component made radioactive with C-14. Plasma and urine samples were analyzed. (See Figures I and II) The radioactive tracer study substantiated the previous clinical evidence that the release of nicotinic acid from the Geroniazol TT tablet produced a gradual rise in plasma levels to a plateau for a total of 12 hours and more.

Such proven sustained activity makes the management of geriatric patients much easier by minimizing the possibility of neglected doses through absent-

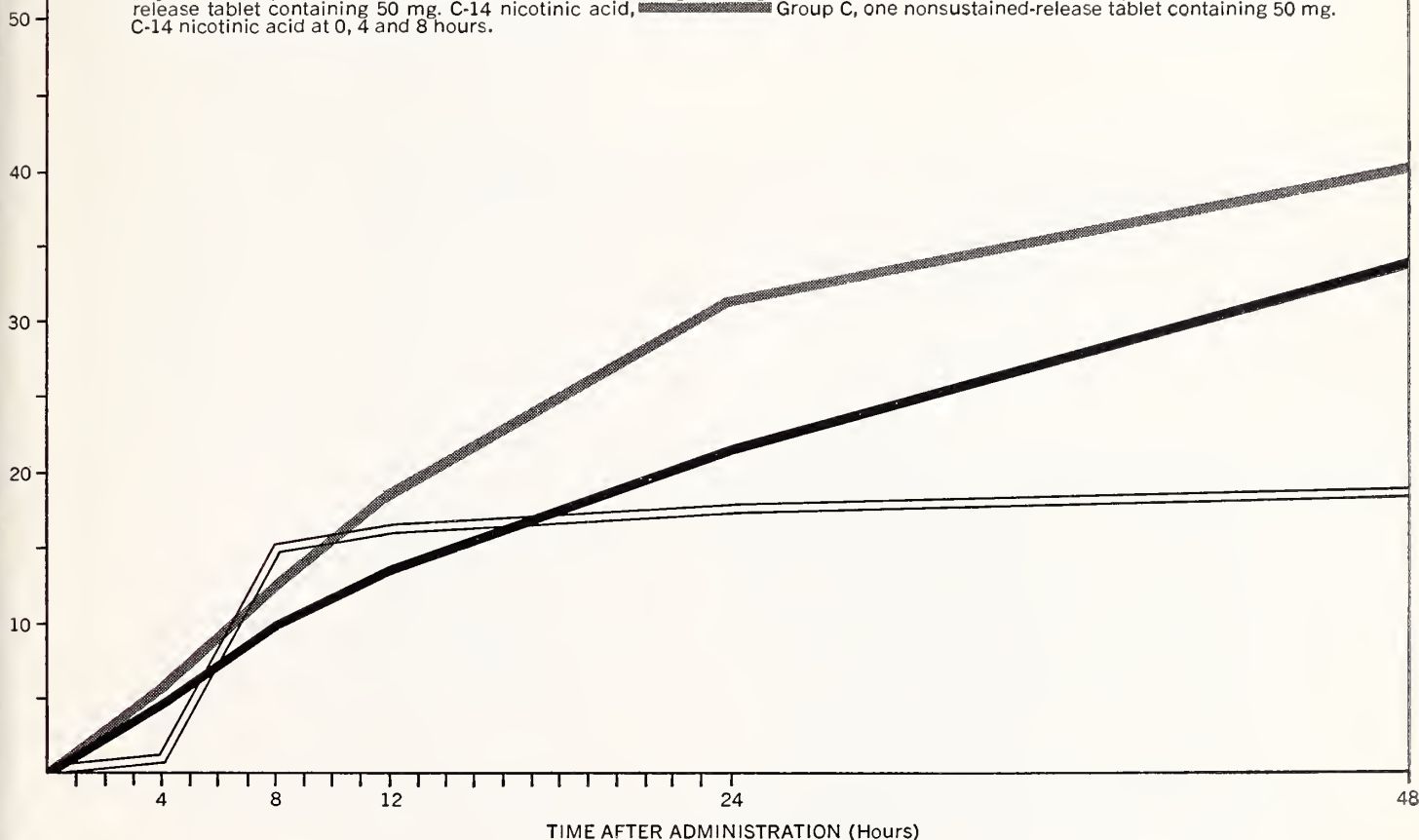
mindedness or senile confusion. Therapy *can* be continuous on a daily dose of only one Geroniazol TT tablet every 12 hours.

The gradual release of nicotinic acid in Geroniazol TT will provide the well-known peripheral vasodilation needed in patients with deficient circulation and with a minimum amount (if any) of "flushing." Also cerebrovascular circulation is complemented by perytlenetetrazol, long-established as a cerebral and respiratory stimulant.

Geroniazol TT improves the typical, unfortunate signs of senile confusion. Patients become more alert

ged and debilitated

Fig. 11. Cumulative average urinary excretion of C-14 radioactivity following oral administration of C-14 nicotinic acid tablets. Key: — Group A, one sustained-release tablet containing 150 mg. C-14 nicotinic acid, — Group B, one nonsustained-release tablet containing 50 mg. C-14 nicotinic acid, — Group C, one nonsustained-release tablet containing 50 mg. C-14 nicotinic acid at 0, 4 and 8 hours.



less confused and moody. Personal care, memory, emotional stability, social attention improve. Fatigue, pathy and irritability are reduced.

A prescription for 100 tablets of Geroniazol TT will permit your patients to enjoy the benefits of time-prolonged nicotinic acid/pentylentetrazol therapy, at an economical price. Dosage is only one tablet every 12 hours.

Contraindications: There are no known contraindications.

Precautions: Exercise caution when treating patients with a low convulsive threshold.

Side Effects: Side effects are rarely encountered, however due to the vasodilatation effect of nicotinic acid, transitory mild nausea, flushing, tingling and pruritus are possible.

Dosage: One tablet every 12 hours.

Supplied: Prescribe bottles of 100 tablets, to take advantage of recent price reduction.

References: 1. Report by Nuclear Science & Engineering Corp., Pittsburgh, Pa., in files of Philips Roxane Laboratories. 2. Connolly, R.: W. Virginia Med. J. 56:263 (Aug.) 1960. 3. Curran, T. R., and Phelps, D. K.: Am. Pract. & Digest Treat. 11:617 (July) 1960.



"First with the Retro-Steroids"

PHILIPS ROXANE LABORATORIES

Division of Philips Roxane, Inc., Columbus, Ohio
A Subsidiary of Philips Electronics and
Pharmaceutical Industries Corp.

Geroniazol[®] TT

nicotinic acid 150 mg., pentylentetrazol 300 mg.
Tempotrol[®] Time Controlled Tablet

Diarrhea

TROCINATE® 400 MG.
BRAND THIPHENAMIL HCl.

The relief received from the first Trocinate 400 mg. tablet is so prompt that the discomfort of diarrhea ceases to be a bother. May be repeated every four hours.

Upon request, a supply of Trocinate 400 mg. with literature will be sent to physicians for their personal use.

WM. P. POYTHRESS & CO., INC.

RICHMOND, VIRGINIA 23217

Manufacturers of ethical pharmaceuticals since 1856



Butazolidin®, phenylbutazone In Acute Superficial Thrombophlebitis

Contraindications: Edema; danger of cardiac decompensation; history or symptoms of peptic ulcer; renal, hepatic or cardiac damage; history of drug allergy; history of blood dyscrasia. The drug should not be given when the patient is senile or when other potent drugs are given concurrently. Large doses of Butazolidin alka are contraindicated in glaucoma.

Warning: If coumarin-type anticoagulants are given simultaneously, watch for excessive increase in prothrombin time. Instances of severe bleeding have occurred. Pyrazole compounds may potentiate the pharmacologic action of sulfonylurea, sulfonamide-type agents and insulin. Carefully observe patients receiving such therapy. Use with great caution in the first trimester of pregnancy.

Precautions: Before prescribing, carefully select patients, avoiding those responsive to routine measures as well as contraindicated patients. Obtain a detailed history and a complete physical and laboratory examination, including a blood count. The patient should not exceed recommended dosage, should be closely supervised and should be warned to discontinue the drug and report immediately if fever, sore throat, or mouth lesions (symptoms of blood dyscrasia); sudden weight gain (water retention); skin reactions; black or tarry stools or other evidence of intestinal hemorrhage occur. Make regular blood counts. Discontinue the drug immediately and institute countermeasures if the white count changes significantly, granulocytes decrease, or immature forms appear. Use greater care in the elderly and in hypertensives.

Adverse Reactions: The most common are nausea, edema and drug rash. Swelling of the ankles or face may be minimized by withholding dietary salt, reduction in dosage or use of diuretics. In elderly patients and in those with hypertension the drug should be discontinued with the appearance of edema. The drug has been associated with peptic ulcer and may reactivate a latent peptic ulcer. The patient should be instructed to take doses immediately before or after meals or with milk to minimize gastric upset. Mild drug rashes frequently subside with reduction of dosage. However, rash accompanied by fever or other systemic reactions usually requires withholding medication. Purpuric rash has also been reported. Agranulocytosis, exfoliative dermatitis, Stevens-Johnson syndrome, or a generalized allergic reaction similar to serum sickness may occur and require permanent withdrawal of medication. Stomatitis, salivary gland enlargement, vomiting, vertigo and languor may occur. Leukemia and leukemoid reactions have been reported. While not definitely attributable to the drug, a causal relationship cannot be excluded. Thrombocytopenic purpura and aplastic anemia may occur. Confusional states, agitation, headache, blurred vision, optic neuritis and transient hearing loss have been reported, as have hyperglycemia, hepatitis, jaundice, and several cases of anuria and hematuria. With long-term use, reversible thyroid hyperplasia may occur infrequently. Moderate lowering of the red cell count due to hemodilution may occur.

Dosage in Acute Superficial Thrombophlebitis: Initial: 6 capsules or tablets daily in divided doses for 2 or 3 days. Maintenance: 3 capsules or tablets daily. Usual duration of therapy is 5 to 7 days (rarely beyond 10 days). 6509-V(B)R2

*Stein, I.D.: Presented at the American Academy of General Practice, Dallas, Sept. 1967.

For complete details, please see full prescribing information.

it used to take weeks



Acute superficial thrombophlebitis before treatment



After 5 days of Butazolidin therapy

In acute superficial thrombophlebitis, patients were usually bedfast for 2 to 4 weeks, tying up hospital beds, requiring costly nursing care and time-consuming procedures such as warm soaks and packs.

When Butazolidin was added to the usual regimen, 960 of 1000 patients obtained complete resolution; most required only 30 capsules or tablets; relief of pain and discomfort and regression of inflammatory signs and fever occurred within a few days.*

Side effects occurred in 6% of the 1000 patients. While none were serious or long-lasting, Butazolidin can produce severe side effects in rare instances. Further, not every patient can take Butazolidin. Therefore, select patients with care and follow them closely. Contraindications, Warning, Precautions and Adverse Reactions are summarized in adjacent column.

Butazolidin gets bedfast thrombophlebitics out of bed, fast. Usual duration of treatment is 5 to 7 days, and rarely exceeds 10 days. Try it and see. For full details, please refer to the complete prescribing information.

Butazolidin[®] alka

Capsules:
phenylbutazone, 100 mg.; dried aluminum hydroxide gel, 100 mg.; magnesium trisilicate, 150 mg.; homatropine methylbromide, 1.25 mg.

Butazolidin[®] phenylbutazone

Tablets of 100 mg.

Geigy



Geigy Pharmaceuticals
Division of
Geigy Chemical Corporation
Ardsley, New York

LOW-BACK PAIN

A CONSERVATIVE, FOUR-POINT PROGRAM

The low back pain that is most frequently seen in general practice is mechanical in nature, i.e., postural back pain, joint dysfunction and acute back strain.^{1,2} For this type of discomfort, a conservative regimen is usually sufficient to relieve aches and pains, and to help keep the patient functioning. Components of this basic program include:

1 Bed "If the patient is in the pain-spasm-cycle...there is no alternative or substitute for absolute bed rest..."³

3 Heat "A very valuable method of applying heat at home is a prolonged hot bath..."⁵

2 Board "Boards should be ordered under the mattress...these boards act by immobilizing the spine..."⁴

4 Robaxin®-750 (methocarbamol, 750 mg. capsule-shaped tablets) A well-tolerated⁶ skeletal muscle relaxant, methocarbamol helps relieve spasm "...without interfering with normal tone and movement."⁷ And there is little likelihood of sedation.⁶

Indicated for relief of skeletal muscle spasm. Contraindicated in hypersensitive patients. Side Effects (lightheadedness, dizziness, drowsiness, nausea) may occur rarely, but usually disappear on reduced dosage. Hypersensitivity reactions develop infrequently. See product literature for further details. Also available: Robaxin® Tablets (methocarbamol, 500 mg.) Robaxin Injectable (methocarbamol, 1 Gm./10 cc.)

References: (1). Godfrey, C.M.: Applied Therap. 8:950, 1966. (2). Gottschalk, L.A.: GP 33:91, 1966. (3). Rowe, M.L.: J. Occup. Med. 2:219, 1960. (4). Cozen, L.: South Dakota J. Med. 18:26, 1965. (5). Soto-Hall, R.: Med. Sc. 14:23, 1963. (6). Weiss, M. and Weiss, S.: J. Am. Osteopath. A. 62:142, 1962. (7). Feuer, S.G., et al.: New York J. Med. 62:1985, 1962.

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CHANGE OF ADDRESS

Please notify the
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*Help keep the mailing list
up to date*



One by one the family's downed Because the G.I. bug's around

Parepectolin for quick relief of acute diarrhea
... soothes colicky pain with paregoric*
... consolidates fluid stools with pectin
... adsorbs irritants with kaolin,
and protects intestinal mucosa

Whether it's a 24-hour "bug", a food problem,
or simply nervousness and anxiety, Parepectolin
will bring the diarrhea under control until etiolo-
gy can be determined. In some cases, Parepec-
tolin may be all the therapy necessary.



Parepectolin[®]

Each fluid ounce of creamy white suspension contains:

*Paregoric (equivalent) (1.0 dram) 3.7 ml.
Contains opium ($\frac{1}{4}$ grain) 15 mg. per fluid
ounce.

warning: may be habit forming

Pectin (2½ grains) 162 mg.
Kaolin (specially purified) (85 grains) 5.5 Gm.
(alcohol 0.69%)

Usual Adult Dose: One or two tablespoonfuls three
times daily.

Usual Children's Dose: One or two teaspoonfuls three
times daily.



WILLIAM H. RORER, INC.
Fort Washington, Pa.

easy does it!

tear, moisten, compare—that's all!





Transmissible Drug Resistance

Infectious Drug Resistance: A New and Important Cause of Antibiotic-Resistant Bacteria

JOHN P. SMITH, A.B., and JESSE H. MARYMONT, JR., M.D., *Wichita**

IN 1956 A *SHIGELLA* resistant to sulfonamides, streptomycin, chloramphenicol and tetracyclines was isolated from a patient with dysentery in Japan.¹ No such multiple-drug-resistant organism had been previously reported, despite extensive nationwide surveys of the antibiotic sensitivities of shigella isolates.

From 1957 to 1964 the number of such isolates steadily increased, until in 1964 over 50 per cent of shigella isolated were resistant to the four antibiotics listed above.² Despite its obvious clinical importance, little attention was paid to multiple-drug-resistant *Enterobacteriaceae* in the United States, the first reports being published in 1966.^{3, 4} It is now apparent that such organisms are common and can be found wherever sought.⁵

The emergence of an organism resistant to a specific antibiotic after prolonged use in an ill patient is well known and can be explained by selection and mutation. These mechanisms, however, are inadequate to account for the rapid increase in organisms resistant to several antibiotics, the simultaneous isolation of sensitive and multiple-resistant shigella from the same patient, the isolation of multiple resistant bacteria after treatment with only one antibiotic and the concomitant recovery of *E. coli* with the same pattern of drug resistance.

To explain these findings it was suggested that antibiotic resistance might be transferred from *E. coli*

to salmonella and shigella in vivo, and this has been demonstrated in vitro. In this paper we will review the genetics of gram-negative organisms with trans-

Infectious drug resistance, due to transfer of genetic information from resistant to sensitive bacteria poses a new and potentially very important problem to the physician concerned with treating infectious diseases. The presence of the resistance transfer factor in bacteria isolated in Kansas is demonstrated and the consequences discussed.

ferrable drug resistance and describe the isolation of such salmonella from patients in Kansas.

Genetic information can be transferred between bacteria by transformation, transduction and conjugation. In each, a portion of genetic material of one cell is introduced into another. The genetic material introduced from the donor cell cannot usually be maintained as an independently multiplying entity by the recipient, but genetic recombinants, i.e., cells having characteristics of both the donor and recipient cell may on occasion arise from the cells receiving a portion of the donor cell's chromosome.

The virulence of pneumococci is related to the presence of a bacterial capsule; those without a capsule being avirulent. In 1928⁶ it was demonstrated

*From the Wesley Medical Center and Wesley Medical Research Foundation, Wichita, Kansas.

that if living, non-capsulated type II pneumococci and dead, capsulated type I pneumococci were injected into a mouse the animal died of septicaemia and capsulated type I organisms were recovered. The hereditary material from dead type I bacteria that enabled living type II bacteria to make type I capsular material has been shown to be DNA. This *transformation* of pneumococci was the first indication that hereditary material is DNA, and it stands as a landmark in the history of genetics.

In 1951 Lederberg and his associates discovered that bacterial mutation could be induced by cell free extracts.⁷ It was subsequently shown that this was due to transfer of DNA between bacteria by a phage (a phage is a virus that infects bacteria in much the same way that poliovirus infects nerve cells). This process is called *transduction*, which literally means "leading across."

Conjugation is the actual copulation (coupling) of bacteria with subsequent transfer of genetic information. In the human all genetic information is on the chromosomes. Bacteria, in addition to chromosomal DNA sometimes contain small DNA molecules of genetic material in the cytoplasm; these are called episomes and can be transferred during conjugation. The resistance transfer factor (RTF) is an episome that contains the information for multiple drug resistance, and is responsible for the vast majority of multiple-drug-resistant salmonella and shigella. Actual cell-to-cell contact between bacteria is necessary for the transfer of multiple drug resistance, except in a few special cases when transduction (carrying across of an episome from one cell to another by a phage) occurs. The multiple drug resistance is always transferred as a complete unit, i.e. if an organism is resistant to three antibiotics, resistance will be transferred to recipient bacteria for all three antibiotics. It is important to understand that the genetic determinants for drug resistance are contained within the episome and transferred, not the actual drug resistance itself.⁸ It sometimes happens that the recipient bacteria loses the episome in the course of reproduction and in this case the progeny are drug sensitive.

Most gram-negative bacteria can harbor the RTF. Included are salmonella, shigella, escherichia, klebsiella, proteus, pseudomonas, serratia and pasteurilla. The presence of the RTF does not alter the virulence of the organism. It has not been possible to transfer the RTF to gram-positive bacteria.

Materials and Methods

Eighty-nine salmonella and shigella organisms isolated by the Kansas Public Health Laboratory during the first half of 1967 were studied.* The antibiotic

sensitivity pattern of each was determined using a standardized inoculum on Mueller-Hinton agar and measuring growth inhibition by high concentration antibiotic impregnated paper disks.⁹ Sensitivity to polymyxin B, cephalothin, kanamycin, sulfisoxazole, neomycin, streptomycin, ampicillin, nitrofurantoin, tetracycline and chloramphenicol was evaluated, and only those organisms resistant to at least two drugs were investigated for the RTF.

The presence of a RTF is demonstrated by growing the multiple-drug-resistant organism together with an *E. coli* that is sensitive to the antibiotics of interest. During growth, conjugation and transfer of the episome for the RTF (if present) will occur and some of the *E. coli* in the mixture will then have the same resistance pattern as the salmonella.[†]

Results and Discussion

The cultures examined included 83 salmonella and six shigella. Nine of the salmonella cultures (11 per cent) and three of the six shigella (50 per cent) were resistant to at least two of the antibiotics tested. One of the salmonella was resistant to five antibiotics, two were resistant to four, two to three and four were resistant to two antibiotics. One of the shigella was resistant to seven antibiotics, one to six and one to only two. At least one of the organisms with the RTF was resistant to each of the eight antibiotics used. The frequency with which the 12 organisms were resistant to the specific antibiotics varied from 11 with sulfisoxazole to one with nitrofurantoin.

† *E. coli* K₁₂ 201 and K₁₂ 13A, supplied by David H. Smith, M.D., Harvard Medical School, were used. Of importance here is the fact that both were streptomycin resistant (S_m^R) and negative for the F factor (F⁻). For the exact genetic makeup see New Eng. J. Med., 275:626, 1966.

Twelve hour cultures of the *E. coli* and salmonella or shigella in brain heart infusion broth (BHIB) were diluted 1:20 with BHIB, incubated at 37°C for 2 hours and then 2 ml. of the resistant salmonella mixed with 2 ml. of *E. coli*. The entire 4 ml. was filtered through a sterile 0.22 µm millipore filter and the filter placed organism-side-down on a Mueller-Hinton agar (MHA) plate for 24 hours at 37°C. The filter was then removed, placed in 5 ml. of BHIB, and agitated vigorously to free the impinged organisms. A 1:20 dilution of this broth was made with sterile normal saline. To MHA containing 1.5 mg/ml of streptomycin and a drug to which the salmonella or shigella was resistant, 0.1 ml of the 1:20 dilution was plated. (The concentrations of the drugs were tetracycline 20 mcg/ml; chloramphenicol, cephalothin, neomycin and kanamycin 25 mcg/ml; ampicillin 10 mcg/ml; nitrofurantoin 250 mcg/ml; and polymyxin B 250 U/ml.) These plates were examined for growth after 24 and 48 hours at 37°C, and if present was interpreted as transfer of the RTF to the *E. coli*. Control plates inoculated with unconjugated *E. coli* K₁₂ 201 and K₁₂ 13A were made and were always negative. The *E. coli* were also tested against each drug by the disc sensitivity method and found to be sensitive to each drug used with the exception of streptomycin.

The frequency of transfer of the RTF from donor to recipient cells established its episomal (rather than chromosomal) location.

* We are grateful to Dr. Nicholas Duffett, Director, for the opportunity to work with this material.

TABLE 1
ORGANISMS FOUND TO CONTAIN THE RESISTANCE TRANSFER FACTOR, COUNTY IN WHICH ISOLATED AND PATTERN OF ANTIBIOTIC RESISTANCE

Organism	County	Nitrofurantoin	Tetracycline	Ampicillin	Cephalothin	Sulfisoxazole	Neomycin	Polymyxin B	Kanamycin	Chloramphenicol	Streptomycin
<i>Sh. flexneri</i>	Johnson	S	R	R	R	R	R	S	S	S	R
<i>S. typhimurium</i>	Allen	S	R	S	S	R	S	S	S	S	R
<i>S. typhimurium</i>	Sedgwick	R	S	R	R	R	S	S	S	S	S
<i>Sh. sonnei</i>	Wyandotte	S	S	R	S	R	S	S	S	S	S
<i>S. litchfield</i>	Johnson	S	S	S	S	R	S	S	S	S	R
<i>S. blockley</i>	Harvey	S	R	S	S	R	S	S	S	S	S
<i>S. typhimurium</i>	Johnson	S	R	S	S	S	S	S	S	S	R
<i>S. typhimurium</i>	Sedgwick	S	R	S	S	R	R	S	R	S	R
<i>S. typhimurium</i>	McPherson	S	S	R	R	R	S	S	S	S	R
<i>S. infantis</i>	Sedgwick	S	S	S	S	R	S	S	S	S	R
<i>S. St. Paul</i>	Sedgwick	S	R	S	R	R	S	S	S	S	S
<i>Sh. sonnei</i>	Wyandotte	S	R	S	R	R	R	R	R	R	S

Four of the resistant organisms were isolated in Sedgwick County, three in Johnson County, two in Wyandotte County and one each in Allen, Harvey and McPherson counties. The information on these organisms is summarized in *Table 1*.

The first report of the RTF outside of Japan came from Great Britain in 1962,¹⁰ and in the following years they were found in most European countries and in Israel. The first studies in the United States were made by Kabins and Cohen in Chicago⁵ and reported in 1966. They found multiple antibiotic resistance in 12.5 per cent of salmonella isolates, and a RTF in three of four available for study. Twenty-four per cent of shigella isolates were multiple resistant, and all of those tested had the RTF.

Smith reported multiple resistance in eight of 32 salmonella isolates in Boston,³ all of which had the RTF.

The present study indicates that the RTF is not limited to large metropolitan areas in the United States, and that the incidence in salmonella and shigella isolates in Kansas is equal to or greater than that reported from Chicago. Based upon past experience it will undoubtedly become an even more serious problem with the passage of time.

Although no antibiotic therapy has been demonstrated to affect the course of salmonellosis (other than typhoid fever) this is not true for infections with enteropathogenic *E. coli* (EPEC) in infants. Neomycin and kanamycin are usually the drugs of choice, but from data in this and other reports it is

apparent that transferrable resistance in EPEC may prove to be of serious import.

It is known that the RTF is usually transferred from a nonpathogen such as *E. coli* to pathogenic bacteria in the intestine. In addition to the problem of resistant shigella and salmonella, organisms of the genera proteus, pseudomonas and aerobacter may receive the episome. These, together with *E. coli* are among the common causes of urinary tract infection, and as the incidence of the RTF increases, it would appear inevitable that these will become ever more of a therapeutic problem.

The level of drug resistance caused by the RTF differs from host bacterium to host bacterium and also between RTF factors, however, the level is almost always sufficiently high that drugs to which RTF carrying bacteria are resistant are not effective. It must be remembered that patients sometimes excrete a mixture of both sensitive and resistant bacteria, and in these cases it is sometimes possible for the antibiotic to kill sufficient organisms that the host's defenses can overcome the remaining.

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Medical Education

Preceptors and Preceptorships: The Teaching and Learning of Patient-Oriented Care

ROBERT M. DORN, M.D., *Beverly Hills, California**

THE AUTHOR, a practicing psychiatrist and psychoanalyst with close teaching ties to medicine, has been greatly concerned with a growing void in medical education. The full-time teacher is torn between research, the need to publish, and the necessity or desire to teach. The medical student and house officer are faced with increased knowledge in basic sciences and medical specialties. Each department wants more time. With this comes sharper focus on disease process, less on the patient. Young¹⁴ points out the dilution or gradual disappearance of opportunities to teach comprehensive medical care.

Some distinguished teachers of internal medicine believe that the internist no longer can maintain sufficient competence as a clinician and teacher in general medicine and that a retreat into a sub-specialty is inevitable. One cannot help but wonder what will happen to medical students and house officers if all teachers of medicine, especially those with full-time academic positions deal with patients only as specimens of sub-specialty interests.

Other factors besides the knowledge explosion contribute to this dilemma. Fear or relative ignorance may hasten the retreat into sub-specialization. Full-time positions and academic promotions are gained today primarily through research and publication. Tenure is seldom granted for teaching ability alone, although many dedicated individuals prove exceptions to this statement. In addition, the doctor-patient relationship and appropriate treatment of a sick human being may be sacrificed today in the name of "a more scientific," more "objective," and finally more "thorough" approach to diagnosis and treatment.

The problem of educating the physician of the future to care for *people* remains. The clinician can best demonstrate personal patient care. It should take place early enough for the medical student to fit into his concept of a medical way of life. A preceptor program, modified for this purpose, seems an ideal vehicle.

During the past one and a half years, the Beverly

Hills District Branch had a Committee on Liaison with Medical Schools. Its purpose was to set standards for preceptors and potential preceptees, and to develop a set of principles for the curriculum committee and faculty of one of the local medical schools.

It is the practicing physician following his patient from office (in health and disease), to hospital, and hopefully back to health, who is best situated to observe and communicate what he sees. A well coordinated extramural preceptor program provides this opportunity. A medical school that acknowledges this fact, and encourages excellence in its participating clinical faculty, will pave the way for excellence in its graduates, regardless of the field they eventually choose to follow.

At the time of initial preparation of this paper, 36 schools had preceptorship programs. They were contacted. Twenty-four replied.

The first section of this paper is a survey of the pertinent preceptorship literature and a résumé of the 24 replies. The second section draws on the literature, the correspondence, committee work, and the author's personal experiences to describe preceptorships designed to highlight "total" patient care. Benefits accrue to the student, preceptor, medical school, and organized medicine, as well as the patient of tomorrow's physician.

The Literature on Preceptorships

The history of contemporary programs is well described by Bowers and Page,² Howell,³ Jones *et al.*,⁴ and Trowbridge.¹⁰ They relate important, detailed experiences in selection, matching, preparation, and sustaining of programs.

Several medical students have written about their experiences.^{4, 5, 6} While the reports tend to be positive, they are also critical, and make blunt suggestions for improving existing programs.

*President, Beverly Hills District Branch, Los Angeles County Medical Association, 1965-66, 450 North Bedford Drive, Beverly Hills, California 90210.

Parkin and Peterson⁷ carefully and critically assess a sample of 15 preceptors in the University of Wisconsin program. They point out questionable practices, show the need for careful supervision of teaching, and suggest increasing student activity to stimulate thinking rather than teaching how to do things. Wescoe¹¹ feels the Kansas program is an unqualified success because of constant re-evaluation of preceptors. The primary need is to teach the future physician the philosophy of medicine. Trowbridge¹⁰ has an excellent review of the controversy, academic medicine or vocational training. He describes methods for careful selection of preceptors. After reviewing the pros and cons he concludes that a well-run program is worthwhile. Wiggins¹² does not agree. He has had no first-hand experience with preceptorships, but feels such programs have not been clearly defined. Education should be the main goal of a medical school, and contrary to Trowbridge and others, Wiggins feels preceptorships offer only vocational training. Wood¹³ is strikingly ambivalent.

The last two authors seem mainly concerned with "relinquishing" education to other staff than "full-time educators." Wood says: "Only teachers devoting their life to the core of learning are close enough to the complex problems of their profession to plan wisely the education of the future."

One wonders how extra-mural teaching and the careful use of clinical staff become a threat to so-called "good education." Could it be that what is at stake, is a threat to some educators' needs for parochial control?

Replies to Correspondence

Duration of Preceptorships.—The length of programs vary widely. The universities of Illinois, South Carolina, Texas, and Wisconsin set aside an entire elective quarter (3 months). At the other extreme is the University of Washington which permits the fourth year student to elect ten days to two weeks with a general practitioner. The majority of schools consider four to six weeks the optimal period.

Experience With Preceptorships.—The University of Wisconsin program began 30 years ago. Several schools have 15 or 16 years' experience; two have one year, and one initiated a program in 1966.

Mechanics and Goals of Preceptorships.—Specialists may be used if they maintain a broad-based practice. The emphasis is on programs designed to interest or expose students to general or family practice, and the physicians' relationship to community structure and needs. Rural or smaller communities (Kansas: 2,500, Missouri: 5,000, Nebraska: 4,000) are used in most programs for this reason. Some schools mention considering urban preceptorships

when more experience has been collected. Required preceptorships are in the minority. Where elective, about 25 per cent of each class chose them over alternatives. Periodic on-the-job reports to the curriculum committee are required of most preceptees.

Several replies emphasized the importance of careful preceptor selection for integrity, teaching interest and ability, and the need for ongoing contact between school and preceptor. Two schools questioned the benefit of preceptorships over community hospital externships; they were greatly outnumbered by the favorable, and even enthusiastic responses.

An interesting fact that came to light from the correspondence was the important liaison role of the Dean's Committee. Clinical and academic faculty, school alumni, members of the local Academy of General Practice, county and state medical societies serve together with a common interest. This becomes a solid rallying point for discussions of mutual interests and problems in medicine.

Goals and Benefits

Educating the Medical Student.—Contemporary programs were initiated historically because of individual goals of medical school teachers and varying needs of different schools. Some began to obtain additional hospital beds. Others felt the medical school curriculum did not offer a well-rounded exposure to needs of future physicians. This became particularly acute as fewer men went into general practice and rural communities. A large number of schools incorporated preceptorship programs to counteract this trend. Individuals both in the medical school and clinical practice, county and state societies, alumni groups, and Academies of General Practice played important roles in this development.

However, many educators saw another potential benefit. Beginning in the second or third year of medical school it could be worked into modern revisions of curriculum. Possibly it could prove a valuable adjunct to teach students how a doctor cares for his patient in a continuing manner, as a human being, and as part of a social unit.

During this period the medical student is relieved of his routine responsibilities at the school. He is one-step removed from the somewhat artificial life of the clinic and hospital, from the remote atmosphere of being only second- or third-hand responsible for the patient and works hand-in-hand with an individual physician on a daily basis. This relationship is intense. He accompanies the practitioner from morning until night and, on occasion, in the night on emergency calls. He is offered an additional facet to the model for his future. While he has met the clinician in the hospital, in the clinic, and on ward rounds, he will now see him through different eyes.

There is a wealth of rich material in this approach. The goal is to offer an experience quantitatively and qualitatively different than that available at the medical school. The student will see the physician totally responsible for all aspects of patient care. While this has been taught in the medical school, it only becomes a reality in practice. Academic education persistently dilutes and distorts the fact that the treatment of illness is basically the treatment of an ill person. Regardless of efforts made to counteract this, the need to learn facts about health and disease causes a shift in emphasis. The preceptorship acts as a counterpoint; a good clinical teacher reflects a different attitude. He is thinking of *his* patient, whether in regard to a minor "every-day" ailment, or a baffling and challenging rare disorder. The proprietary feeling is obviously mutual. The student hears the patient refer to "my" doctor. It is no wonder that men who have experienced preceptorships return to school with a healthier respect for medical practitioners, and view medicine with less division between academic life and practice.

The preceptors must be chosen carefully. The student sees for himself that the practicing physician of today continues with his medical education. The moral and ethical attitudes, as they occur in practice, cannot be taught by word nearly as explicitly as they can by example. As the preceptee joins the physician in this life, he can expect to gradually *feel* a part of it.

It is easy to follow the role of the physician in the community when the medical practice is in a small town. However, the private practitioner of medicine in the large city can also teach something about community structure because of his total responsibility for his patients. The physician can show the medical student something of community needs and civic planning, and his role as physician in total community responsibility. Certain segments of health care can be followed more easily in the community hospital and private practice than they can in the teaching hospital of the medical school. It will be up to the medical practitioners to show this to the medical student. The continuity from office to hospital and back home is directly observable. The medical student, through his identification with his preceptor, will find it easier to form an "identity" with his own future. As he attends early morning rounds or surgery, sees postoperative patients in the hospital, continues to luncheon conferences and meetings, office hours, and various ancillary functions, he will find it increasingly easy to formulate where he himself wishes to go. He and his preceptor will have the benefit of mutual stimulation. It is not surprising that such experiences serve to stimulate latent interest. It is these weeks that may, for the first time, crystallize the meaning of

social, economic, and medical problems of the individual as they affect him, his family and the society within which he lives.

During the third and fourth years of medical school, the teaching curriculum almost necessitates a splintering into the various specialties to afford the medical student a chance to learn as much as possible in depth. In the day of increasing specialization, it is obvious that no department has enough time; there has to be persistent pull by each department for as much possession of the medical student as it can accomplish. With the rise in importance of basic and clinical research, and the large number of grants available to the medical school and its faculty, it is not surprising that the student is also encouraged to gain as much knowledge in specific areas as possible.

At some point we should offer the medical student an opportunity to step back and gain perspective. We should encourage him to ask, "Where am I going? What do I want to be?" He should be encouraged to develop values and ideas, not only in contemporary terms from the view of medical school, but also as a member of the community and American society.

It is unlikely he can accomplish this without exposure to other possibilities than experienced to date. He must learn what some clinicians deeply believe and practice. Stone⁹ says:

To train doctors in the fullest sense means something more than pouring facts into heads. It means training to think of basic problems, to realize the present limits of knowledge, and to understand efforts and methods to expand these limits. It calls for teachers and teaching of high quality, based on broad interests and devotion to learning and investigation. It requires the power of inspiration and character that stirs emulation, also, teachers who see themselves as instruments in providing the best of medical care to the public and who can blend all these qualities into the effort to turn out good doctors.

Benefits to the Preceptor

Many clinicians remember their medical student days with nostalgia, and yearn for an opportunity to teach the new generation some of the things they feel they had to learn through hard practical experience. Even those who give time on a clinical basis to the medical school find they lack adequate opportunity to communicate some of these concepts. A preceptorship affords them the stimulus for organizing their ideas. Others do not realize they have great ability to be teachers, and discover it in the course of working as preceptors. Medical students are alert, enthusiastic, and quick to ask questions and point up contradictions. The mutual stimulation in the intense relationship makes the preceptor work hard. He also experiences great rewards. The academic world is im-

portant to many in the community. The doctor who teaches, often gains in stature in the eyes of his patient because he is interested in passing on his knowledge to others, shows a sense of social responsibility, and is a man to be proud of. A review of the letters from the medical schools indicates that where men have been able to show ability as teachers, many have become increasingly enthusiastic. Their sense of re-dedication grows as they see the harvest of their hard work.

Benefits to Medical School and Organized Medicine

As is well known to all physicians (both in academic and clinical settings), the "town-gown" syndrome is an affliction Medicine can ill-afford. Mutually rewarding projects, shared responsibility for teaching students and curriculum development, can contribute to a healing process. The Dean's Committee becomes such a meeting ground. A closer tie between members of the full-time faculty and members of local medical societies has resulted in a greater appreciation of individual differences, mutual problems, and a respect of each for the other.

American medicine is faced with a greater and more exciting challenge today than ever before in its history. Man's physical and his psycho-social nature are now considered the potential responsibility of the physician. Behavioral factors are more clearly seen as crucial contributors to health and disease. Bogdonoff *et al.*¹ suggest how the doctor-patient relationship can be studied, and techniques mastered to improve it. Silverman⁸ shows how one medical school is carefully integrating multi-disciplinary teams to include behavioral data in a comprehensive biology of health and disease.

Ultimately, it is the practicing physician following his patient from office (in health and disease), to hospital, and hopefully back to health, who is best situated to observe and communicate what he sees. A well coordinated extramural preceptor program provides this opportunity. A medical school that acknowledges this fact, and encourages excellence in its participating clinical faculty, will pave the way for excellence in its graduates, regardless of the field they eventually choose to follow.

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Transmissible Drug Resistance

(Continued from page 427)

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Above all, do no harm.—Hippocrates

Remember how much you do not know. Do not pour strange medicines into your patient.—Sir William Osler, Aphorisms

TODAY, THESE SENTIMENTS are as valid as ever. The increasingly large number of potent compounds available to treat patients makes it imperative that physicians renew and keep up-to-date information about drugs. Until recently, a physician used all his clinical skills in making a correct diagnosis, but paid little attention to therapy since it was believed that anyone could administer medications based on a memorized schedule of dosage and side effects. One need only review the recent articles by Cluff (*JAMA* 188:976, 1964) to realize the high incidence of adverse reactions to drugs and their potential detriment to the patient.

After making the correct diagnosis, the physician has four major choices open to him: (1) surgery, (2) psychotherapy, (3) do nothing (sometimes a wise decision), or (4) administer a wide variety of potent chemicals about which he has had little opportunity to learn anything. The latter is of practical significance especially in today's era of "polypharmacy" for it is the exception rather than the rule to see patients receiving only one drug. Drug interactions are complex and have important therapeutic implications. For example, one drug may either decrease, increase, or have no effect on the metabolism of another drug. One drug may displace another drug from its plasma protein binding sites, thus increasing the quantity of unbound or pharmacologically active drug.

Members of the Clinical Pharmacology Study Unit and Therapeutics and Pharmacy Committee of the

* Clinical Pharmacology & Toxicology Newsletter from the Clinical Pharmacology Study Unit and the Therapeutics and Pharmacy Committee, University of Kansas Medical Center.

University of Kansas Medical Center will endeavor in this monthly newsletter to summarize information about classes of drugs as well as individual drugs in addition to reporting information about drug interactions, adverse reactions, FDA regulations, etc. As you read this newsletter in the next few months, we would appreciate your comments and suggestions. Please forward them to Daniel L. Azarnoff, M.D., University of Kansas Medical Center, Kansas City, Kansas 66103.

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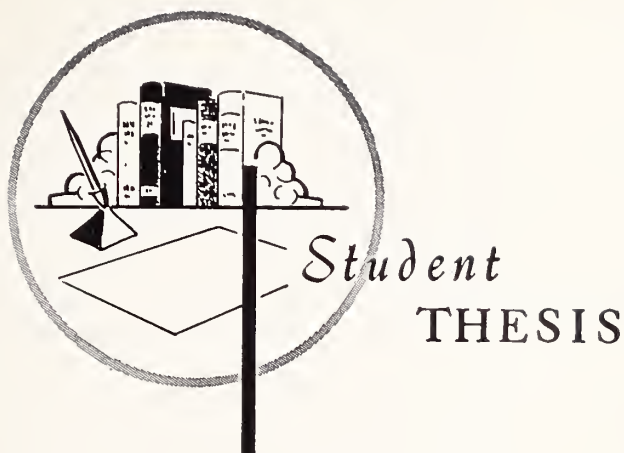
Abrupt withdrawal of barbiturates in addicts may precipitate seizures. The same is true for many other drugs which depress the central nervous system, e.g., glutethimide (Doriden). A recent survey (*Lancet* 2: 337, 1967) revealed that only one of 28 physicians interviewed was aware of this very serious complication of abrupt withdrawal. It should also be pointed out that diphenylhydantoin (Dilantin) is probably ineffective in controlling this type of seizure.

Pentobarbital may be substituted for any barbiturate the patient is using. Sufficient drug is given (0.2-0.4 gm every six hours in most patients) to produce mild toxicity and relieve tremulousness, irritability, and insomnia. This dose is maintained for 36-48 hours and then reduced 0.1 gm per day. Most patients can tolerate this regimen of withdrawal. However, if symptoms of insomnia, tremulousness, or orthostatic hypotension occur, patient is given additional 0.2 gm per day and further reduction in dosage withheld 24-48 hours.

* * *

The development of retroperitoneal fibrosis following long term methysergide maleate (Sansert) therapy is now well substantiated. Recent studies also indicate pleuro-pulmonary fibrosis is also associated

(Continued on page 436)



A Renal Biopsy Review

JOHN P. SCHEUREN, M.D.,* *Kansas City, Missouri*

SINCE THE DESCRIPTION of diffuse renal disease by Richard Bright in 1836, physicians have had difficulty making an exact diagnosis and have gained little knowledge of the process of glomerulonephritis during its early stages. Almost a century passed before serious attempts were made to investigate renal disease during life. This paper will review the renal biopsy as it has developed over the years to its present status as a research and diagnostic tool. The greatest emphasis will be on percutaneous needle biopsy, but more recent methods and possible techniques for the future will be discussed.

Prior to 1943 only scanty reports of biopsies taken during operative procedures were available. In that year Castleman and Smithwick published a series of 100 biopsies taken during splanchnic sympathectomies on hypertensive individuals. The first serious attempt at percutaneous biopsy was made by Alwall in 1944. He performed biopsies on 13 patients with good results in ten. Unfortunately one patient expired following the procedure and he discontinued his study. His results went unpublished until 1952. Iverson and Brun published the results of their series of percutaneous biopsies in 1951. Placing the patient in a sitting position, they obtained adequate tissue in 42 of 62 patients, after 80 attempts. Robert Kark and his group in Chicago devised a new technique, with the

patient in a prone position, with greater success. Their series of 500, published in 1958, revealed a satisfactory tissue specimen in 80 per cent of their attempts. This technique is now widely used by the majority of investigators with results varying from 67 to 90 per cent adequate specimens. Muth in 1965 reported a series of 500 cases with 95 per cent yield.

Although this technique has proven satisfactory in experienced hands and is relatively safe, others have continued the search for a more promising procedure. Hamburger in 1958 developed an open needle technique through a surgical incision. This method had the advantage of obtaining tissue in every case and had better control of hemorrhage. Dr. Monterra and Galle have continued this technique. Conger's group in Philadelphia performed their method under local anesthesia. They reported one death in their first 30 patients. Newer methods using pneumatic air drills are yet to be evaluated but bear some promise in making the procedure more safe. Investigation is presently underway to develop a method of obtaining a specimen via retrograde catheters through the renal pelvis. Apparently the percutaneous route is the most satisfactory technique at present, but the variety of methods attest to its inadequacy in many physicians' hands.

The indications for renal biopsy include most cases of undiagnosed diffuse renal disease, in patients who will cooperate and in those for whom it can be performed without danger. This study can be depended on for an exact diagnosis in about 80 per cent of the cases and with a tissue diagnosis proper therapy can be initiated immediately. The following

* This is one of a group of theses written by fourth year students at the University of Kansas School of Medicine, selected for publication by the Editorial Board from a group judged to be the best by the faculty at the school. Dr. Scheuren recently completed his internship at Kansas City General Hospital, Kansas City, Missouri.

manifestations are considered reasons for renal biopsy:

1. Albuminuria or hematuria of renal origin due to obscure etiology.
2. The nephrotic syndrome.
3. Acute anuria, or sudden oliguria.
4. Selected cases of essential or malignant hypertension.
5. An aid in diagnosis of collagen diseases.
6. Patients suspected of amyloidosis.
7. Toxemia of pregnancy.
8. Serial biopsies to study and follow the progress of treatment in renal disease.
9. Prognosis of certain renal diseases.
10. Evaluation of diabetes mellitus with renal involvement.

In 1955 Kark, et al reported a series in which the diagnosis had been made in all but one case, and the therapy was changed in about 30 per cent of the cases in their series. In undiagnosed renal illness with albuminuria, cylinduria or hematuria the renal biopsy may be the only method of early diagnosis. These symptoms may represent glomerulonephritis, a collagen disorder, polyarteritis or bacterial glomerulonephritis. A tissue specimen and cultures of renal parenchyma may provide the exact knowledge necessary for prompt definitive treatment.

The nephrotic syndrome is by far the most common indication for tissue biopsy of the kidney. This syndrome may be caused by many renal lesions, some of which are amenable to treatment. In acute glomerulonephritis and some collagen diseases the steroids may have a profound effect on the disease if the glomerular lesions are at an early stage and there is only minor evidence of destruction of the glomeruli. These hormones are of little use in amyloidosis but a search for its cause can be made, and treatment instituted if possible. The steroids are, of course, contraindicated in diabetic nephropathy.

In cases of acute oliguria or anuria the renal biopsy is of great value in selecting cases for renal dialysis. In patients with reversible lesions and in cases of toxic nephrosis the extent of tubular damage can be evaluated and the decision to use artificial dialysis can be made on a sound basis.

The patient with hypertension may benefit from renal biopsy even though generally recognized studies have failed to reveal any primary renal disease. Several reports indicate that as high as 40 per cent of the cases of hypertension may have a chronic pyelonephritis associated with essential hypertension. Kark's group reported a case of malignant hypertension diagnosed as chronic pyelonephritis after a renal biopsy. This case was treated successfully with the proper antibiotics and antihypertensive agents. Many investigators recommend a culture of the needle at the time of

biopsy. Both thioglycolate and heart-brain infusion media should be used for the aerobic and anerobic cultures. This procedure is limited by the fact that adequate specimens are not obtained in every case and that focal lesions are biopsied only by chance.

In the area of serial biopsies the progress and prognosis of the renal disease can be followed. Women with toxemia of pregnancy can be biopsied and followed to determine if there is a pre-existing lesion or if the condition is reversible and abated with the delivery of the infant. In research centers the natural history of many renal lesions can be followed and the effects of various drugs on these diseases can be determined. The value of serial biopsies in prognosis lies in evaluation of the severity of the glomerular lesions. The more severe the damage to this portion of the nephron, the poorer the prognosis becomes. The true value of this method may become more apparent as new therapeutic measures are discovered to combat each disease process involving the kidney.

In the literature, there are many tables of contraindications to percutaneous renal biopsy and most of these are unmodified by the open technique. Most of those reporting agree that there are three absolute contraindications to their procedure. First, the uncooperative patient can usually be detected during the history and physical examination and by his reactions during the hospital period. The danger lies in the fact that once the biopsy needle is in place the patient must hold his breath in mid-expiration and any jerking movement could cause a laceration of the kidney with resultant hemorrhage, laceration of the liver, spleen or other internal organs. This contraindication can be overcome by using an open incision under local anesthesia. The second contraindication is a bleeding diathesis. Some investigators feel that prolonged azotemia (a NPN level of 100 mg/100ml and rising) should be included due to defects in clotting under these conditions. The third absolute contraindication is a single kidney. If laceration or excess hemorrhage occurs the management is often nephrectomy. Others feel that congenital anomalies of the kidney with their anomalous blood supply should be included under this heading. Few now believe that biopsies should be taken when a neoplasm is present because of the seeding of tumor cells along the tract of the needle. It is also felt that patients with perinephric abscesses and acute pyelonephritis are a relative contraindication to this procedure since death due to septicemia has been reported. Patients with severe hydronephrosis, calcific arteriosclerosis and renal cysts should be evaluated carefully before biopsy is performed. When the value of a diagnosis exceeds the increased risk, it is sound judgement to proceed.

The procedure is fairly simple and straightforward

as outlined by Kark and others. The patient must be hospitalized for the procedure, but the preliminary studies may be carried out on an outpatient basis. A coagulogram, including bleeding, clotting and prothrombin times, a platelet count and Rumpel-Leed test should be performed. Other laboratory studies include hemoglobin, hematocrit, BUN, NPN, and creatinine. A urinalysis as well as urine culture should be taken. The intravenous pyelogram should be performed with the patient in a prone position, to aid in later localization of the kidneys. A unit of blood should be matched and available for transfusion if the need arises.

The patient is placed on a firm table with a sandbag under the abdomen. His vital signs are monitored by an assistant who allays any fear and apprehension the patient may exhibit. Gardner reported several cases of hypotension during the procedure, although no hemorrhage was evident. It was found that the patient's weight on the sandbag compressed the vena cava and reduced venous return. Therefore care should be exercised in positioning the patient. The excretory urogram is now used to locate the kidney. A line is drawn over the spinous processes and along the lateral border of the quadratus lumborum muscle. Another line is drawn tracing the lowest border of the 12th rib. This is usually done on the right side to avoid splenic puncture on the left. The three lines drawn form a triangle on the patient's skin. Then the distance from the spinous process to the lower pole of the right kidney is measured and transposed to the patient's back at a point one centimeter below the 12th rib. Other methods of localization using renal scan, radioisotopes, and various grids have been tested and are suitable for routine use of required extra equipment.

The area is then anesthetized with a suitable local anesthetic and a 22 ga. spinal needle is used to locate the kidney. It is inserted along a tract at a slight angle through the tissue of the back into the dorsal surface of the kidney. A definite snap is felt when the needle penetrates the capsule and a characteristic to and fro motion of the needle is noted as the patient inhales and exhales. The distance on this needle is marked and measured on a Franklin modified Vim-Silverman needle which is inserted along the same tract until the kidney has been reached. This needle allows the removal of tissue without aspiration or rotation of the hub and therefore minimizes bleeding. The specimen is then removed and fixed in a suitable solution for later use. The needle may now be cultured.

The patient is usually left in this position for 15 to 20 minutes to provide hemostasis by pushing the kidneys against the tissue of the back. The vital signs are monitored often during this period and for the

first few hours after he is returned to the ward. A urine sample is taken every hour for the first day and the patient is kept at complete bed rest for the first 24 hours. Any symptoms of renal colic or shock calls for prompt attention.

The fixed tissue is then imbedded in paraffin and cut for staining with H & E and P.A.S. stains. In selected cases other stains are also used, or fragments may be used for biochemical studies.

Several methods of open biopsy under either local or general anesthesia are described. Although these methods appear to have no distinct advantage over the percutaneous method in adult patients they may be useful in small children. However, several series of percutaneous biopsies are reported which include children under two years of age. When indicated it appears safer to perform this under general anesthesia and possibly through an open incision.

The patient is usually allowed to return home the following day and is permitted limited activity. He is warned to return promptly if hematuria, flank pain or renal colic appears.

The literature is filled with complications. In most large series the incidence of serious complications is below 0.5 per cent. Microscopic hematuria is a normal sequel to the procedure and is of no significance. Gross hematuria appears in about one to three per cent of all patients but usually subsides in 72 hours and rarely requires treatment. Many authors feel that an adequate fluid intake the day of the biopsy and the following days will prevent clot formation in the renal pelvis and ureters. There are few cases of massive hemorrhage in the literature, but in rare instances it may be necessary to give blood transfusions. The danger lies in clot formation with stasis and acute pyelonephritis. Samellar reported a case of fatal septicemia on the 11th post-biopsy day, presumably due to this complication after biopsy of a patient with chronic pyelonephritis. He recommends a high fluid intake following this procedure and vigorous antibiotic therapy if hematuria and a fever appear.

Perinephric hematoma has been reported in about two per cent of most large series. When there is long standing uremia or severe hypertension this appears to be increased to some extent. Strict adherence to the post-biopsy care and careful observation will reveal this complication early. The patient usually complains of flank or abdominal pain and at times a mass in the flank will be noted. Hypotension and a reduced hemoglobin require prompt transfusion and if the hematoma continues to form a nephrectomy may be necessary. The complication may appear from five to ten days after the biopsy is performed. As mentioned above, this is the greatest risk should laceration of the kidney occur.

Severe pain at the operative site can be troublesome but is usually well controlled with analgesics. This may be associated with renal colic and at times a mild ileus may occur.

Arteriovenous fistulae of both the intercostal vessels and the arcuate vessels in the renal medulla have been reported. These are rare and with proper precautions can be avoided. It is important that the biopsy needle remain in the renal cortex to avoid the latter mishap. There has also been one case of periureteral fibrosis reported secondary to retroperitoneal hemorrhage and an excellent result followed ureterolysis in this case.

Hypotension during the renal biopsy has been mentioned above and is well documented. This is usually a gradual decline in pressure and can be reversed by removing the sandbag from the epigastric region. Firm pillows might be substituted in the event this is a serious problem.

In summary, it can be said that the most universal complication is gross hematuria with renal colic. Transfusion is rarely necessary to treat this complication; high fluid intake, bed rest, analgesics and antibiotics, if necessary, usually suffice. Perinephric hematoma is a rare complication in most series, although it must be watched for in every case. There is always the risk of puncturing the liver, gallbladder, diaphragm, or other organs; however, with proper technique this rarely occurs. Only a few deaths have occurred following this procedure and the risk appears no more than during liver biopsy at the present time.

The results of renal biopsy vary with the experience of each author. The tissue submitted for examination should contain as many glomeruli as possible. Many pathologists feel that a minimum of eight to ten is satisfactory for diagnosis in most cases of diffuse renal disease. In most large series an adequate specimen is obtained in 80 to 90 per cent. The highest rate of failure occurs when attempts are made to obtain tissue from uncooperative patients, patients with deformities secondary to arthritis, spondylitis or toxemia of pregnancy. If an individual has had a large, recent, weight loss the kidney may be extremely mobile and difficult to puncture. The contracted scarred kidney of chronic disease may present a similar problem.

The clinical value of the renal biopsy is now becoming more apparent because the tissue evidence can provide an exact diagnosis on which to base the management of renal disease. Kark's series revealed that the biopsy confirmed the diagnosis in about 40 per cent of their cases, and corrected their clinical impression in over 50 per cent of the series. It is particularly useful in the diagnosis of unsuspected inflammatory disease because the exact organism responsible for the infection can be isolated. In patients with the ne-

phrotic syndrome the exact course can be determined and proper treatment instituted. It appears now that corticosteroids are of value only in patients with minimal glomerular damage or histologic study. In general, however, this method of diagnosis profoundly affects the management of renal disease.

Summary

In conclusion, the writer has attempted to summarize the renal biopsy as it has developed over the past few decades. A brief history is presented and the indications and limitations are pointed out. Both the absolute and relative contraindications are discussed in detail. The methods and post-biopsy care are outlined and potential complications noted. I have avoided discussing the actual pathologic histology of the various diseases due to limited space and difficulty in reproduction of photomicrographs. The results that can be expected are reviewed and the usefulness of this procedure balanced against the risk involved. It appears now that the percutaneous renal biopsy has become a useful tool in the armamentarium of physicians who care to treat renal disease seriously.

EDITOR'S NOTE: References may be obtained by writing the JOURNAL, 315 West 4th Street, Topeka, Kansas 66603.

CP + T Newsletter

(Continued from page 432)

with administration of this drug. The thoracic complications are characterized by chest pain, dyspnea, fever, pleural effusions, and pleural friction rubs (*Am. J. Med. Sci.* 254:1, 1967). Fibrotic bands around blood vessels and the urinary excretory system have also been reported. The fibrotic process slowly regresses in some patients when the methysergide is withdrawn. It is strongly recommended that patients on continuous therapy have a drug free period of three to four weeks every three to four months.

* * *

Sodium diphenylhydantoin (Dilantin Sodium) is being increasingly used as an antiarrhythmic drug, especially for digitalis-induced arrhythmias. Several reports have now appeared (*JAMA* 200:335 and 337, 1967) in which cardiac arrest was produced by the intravenous administration of diphenylhydantoin. These reports stress the point that this drug should be reserved for instances of digitalis intoxication which do not respond to other better known procedures such as cautious administration of potassium or procainamide (Pronestyl). Sodium diphenylhydantoin is especially dangerous in elderly individuals with serious cardiac disease. In no instance should it be administered at a rate greater than 100 mg/minute.

The President's Message

DEAR DOCTOR:

Thanksgiving is a time to count our blessings. A number one for the Kansas Medical Society is our core of members who give of themselves in time and effort to programs in the interest of medicine.

A good view of this activity is obtained by observing the multitude of correspondence and phone calls in and out of the executive office. Oliver Ebel and Swede Swenson are on the go constantly to service these efforts. Much goes on unnoticed by most of us.

A salute is due you members—often unrecognized—who serve on committees in hospitals, Blue Shield, KaMPAC, county medical societies, general practice, specialty societies, Kansas Medical Society committees and commissions, civic and many others. The Society thanks you.



Sincerely,

A handwritten signature in dark ink, appearing to read "Scott H. Sell". The signature is fluid and cursive, with a large initial "S".

President



Editorial COMMENT

As of last July the first full year of operation under PL 89-97 Title XVIII, Parts A and B, were completed. In retrospect, individual physicians and their individual patients will have a variety of opinions ranging from absolute opposition to praise. The truth, as is generally the case on controversial questions, lies somewhere between the extremes.

It is quite possible that abuses occurred. Certainly some over age 65 patients received more medical attention and longer hospital stays than they experienced the year before, but that is why Congress passed the law. If an occasional utilization review committee functioned at something under maximum efficiency there was at least a brave beginning and physicians are discovering by experience the value of this service for all patients. It is one further demonstration by the medical profession of their desire to provide every patient the greatest possible economy in his health care, regardless of who pays the cost.

Mechanical procedures have produced crises, complications within the law itself, the different deductibles between A and B were not easy to understand. The definition of "spell of illness" represents a departure from the physician's customary thinking. Billing procedures, claim forms, and their processing all added to items the physician was required to learn and perform in addition to rendering his professional service.

It is surprising, therefore, that the initial year passed as smoothly as it did. Somehow, in spite of his dismay at numerous aspects of this law, the doctor cooperated with the program. Somehow, in spite of regulations that took hours from his leisure time, he served on review and utilization and planning committees to make the program work. And somehow, in the face of dreaded restrictions upon his profes-

sional judgment, he provided necessary medical care according to the high standards of acceptable community practice and conscientiously adhered to the philosophy that his charges to medicare would be no higher than charges made to his average private paying patient. This, in spite of the fact that the cost of rendering a service to the medicare patient is frequently higher.

Expressed in statistics, the first year has a dramatic story to tell. In Kansas, under Part A, there were 81,500 hospital admissions and 68,000 outpatient services for which almost 31 million dollars was paid. Again in Kansas, under Part B, 194,400 medical claims were paid for a total of just under seven million dollars.

Code of Fair Practices

The Pharmaceutical Manufacturers Association, of which C. Joseph Stetler is the president, is a non-profit, scientific, professional and trade organization representing the manufacturers of more than 95 per cent of the nation's prescription drug products.

On September 18, 1967, Mr. Stetler announced that the PMA had adopted a Code of Fair Practices in the promotion of drug products. The Code provides that all promotional communications, including journal advertising, films, exhibits, and instructions to physicians relating to drug products shall be complete and accurate.

. . . Promotional communications to the medical profession which include a description of indicated uses or dosage recommendations for a prescription drug product should also include a summary (or full disclosure where required by law) of side effects, precautions, warnings and contraindications, and of effectiveness for the described indicated uses. Such sum-

mary should have sufficient prominence in terms of type size, location and similar factors to provide reasonable assurance that it will be observed.

Statements in promotional communications should be based upon substantial scientific evidence or other responsible medical opinion. Claims should not be stronger than such evidence warrants. Every effort should be made to avoid ambiguity. Whenever statistical or background information or references to unpublished literature or observations are used in promotional communications, the source material should be available to the medical profession upon request. . . .

No public communication by a manufacturer shall be made with the intent of promoting a drug product as safe and effective for any use before the required approval of the drug product for marketing for such use is obtained. . . .

Promotional communications should have medical clearance before their release.

There are additional sections of the Code further amplifying certain principles. It concludes with the statement that any manufacturer who consistently violates these principles shall be expelled from the association.

OF FOXES AND RABBITS

A plea that the classifications of tularemia frankly recognize that the portal of entry may be the respiratory tract is made in a paper by two North Carolina physicians in discussing cases of the disease in patients exposed to foxes and wild rabbits.

The paper, by F. Walton Avery and Thomas B. Barnett of the University of North Carolina School of Medicine, Chapel Hill, N. C., was published in the April issue of the *American Review of Respiratory Disease* (Vol. 95, No. 4), journal of the American Thoracic Society, medical section of the National Tuberculosis Association.

In a review of the literature on this infectious, generalized disease common to rabbits, ground squirrels, opossums, skunks, coyotes, sheep, and other animals, the authors note that the traditional types of tularemia are called ulceroglandular, oculoglandular, glandular, and typhoidal, "with or without pneumonia." If pneumonia occurs, it is usually considered a complication. However, the authors point out, atypical pneumonia may be the principal manifestation of the infection and, when there is no identifiable external lesion, it might be assumed that the infective agent, *Pasteurella tularensis*, was inhaled.

The authors discuss five cases of tularemia with pneumonia diagnosed and treated at North Carolina Memorial Hospital. Agglutination tests for tularemia were positive in all, but the route of infection was

not known. Two of the patients were friends who had been fox hunting together and were believed to have been infected while hunting; two had been exposed to wild rabbits and presumably picked up their infection from them. The source of infection in the fifth patient, who three months earlier had developed nodular lesions on his arm after killing a rabbit, was not certain. All the patients recovered following treatment with streptomycin and, in some cases, tetracycline.

When pneumonia occurs without an obvious peripheral point of entry, the authors contend that the possibility of infection by inhalation must at least be considered. They point out that proof of inhalation as the route of infection in human pulmonary tularemia is "virtually impossible to obtain and only rarely can be suspected on the basis of strong circumstantial evidence."

"When tularemia occurs with no manifestations other than pneumonia," they state, "we suggest that it is logical and appropriate to include in this classification the term tularemia with pneumonia and to recognize that the lung may be the primary locus of infection as a result of inhalation of the organisms."

MEDICAL ASSISTANTS CERTIFIED

Two medical assistants from Kansas, Vickie P. Holland, Conway Springs, and Dora C. Wilson, Meade, were among the 74 medical assistants who received certification during 1967. The newly certified medical assistants were honored at a luncheon in conjunction with the 11th Annual Convention of the American Association of Medical Assistants held in Los Angeles in October.

"Certified Medical Assistants," according to AAMA certifying board chairman, Mrs. Mary Kinn, Santa Anna, California, "have achieved the highest professional level, and thus are rated as the best qualified and most highly skilled medical assistants in the nation."

Certification may be attained in either the clinical or administrative categories, or both. The eight-hour examination covers medical terminology, medical ethics, human relations, communications, and laboratory orientation. To be eligible for the rigid Certification Examination, a candidate must be a high school graduate, at least 21 years of age, and have a minimum of three years of employment by a licensed Doctor of Medicine, including 12 continuous months of employment by the same physician.



Personalities—IN KANSAS MEDICINE

George E. Burket, Jr., Kingman, was installed as president of the American Academy of General Practice in September. Installation ceremonies were conducted during the annual meeting of the Academy, held in Dallas.

The following Kansas physicians were among those inducted as fellows of the American College of Surgeons in October: W. Curtis Niederee, Great Bend; Marvin K. Lawton, Concordia; Paul R. Carpenter and Wayne L. Rockwell, both of Kansas City; and Jim Farha and Ernest H. Rieger, both of Wichita. The ceremonies were held during the annual meeting held in Chicago.

David H. Clark, WaKeeney, Jack Randle, Bucklin, and Clifton C. Schopf, Clearwater, attended the annual scientific assembly of the AAGP held in Dallas in September.

Charles E. Henneberger, Atwood, received a citation and award for 25 years of service to the American Cancer Society, Kansas Division, at the statewide meeting of the society held in Hutchinson last month.

Governor Robert Docking recently announced the appointment of William F. McGuire, Wichita, to a four-year term on the Kansas Crippled Children's Commission.

"Medical Aspects of Rehabilitation" was the theme of the program for the annual meeting of the Kansas Rehabilitation Association held in Wichita in October. Wichita physicians participating in the program included Lewis Marshall, Jerome Menaker, Henry O. Marsh, Harry J. Wisner, Anita Isaac and Robert K. Purves.

Wendell K. Nickell, Salina, was recently elected to a three-year term on the board of directors of the American Cancer Society's Kansas Division. W. G. Cauble, Wichita, will serve as president for the coming year.

Bert Chronister has returned to his practice in Neodesha, after serving two years as a physician in the U. S. Navy.

Jean Smelker, Topeka, has been appointed part-time pediatric consultant for the Topeka-Shawnee County Health Department's child health services program.

W. Stewart Hiatt, Shawnee Mission, was re-elected president of the Johnson County Unit of the American Cancer Society at the annual meeting in September. New members of the board include James G. Bridgens, Shawnee Mission, and Bruce Hodges, Lenexa.

NEW MEMBERS

The JOURNAL takes this opportunity to welcome these new members into the Kansas Medical Society.

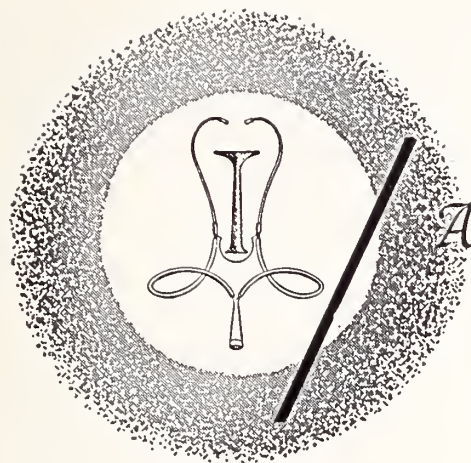
Bert Chronister, M.D.
806 Main Street
Neodesha, Kansas 66757

Steven S. Fountain, M.D.
431 E. Lincoln
Lindsborg, Kansas 67456

Robert E. Feighney, M.D.
519 S. Santa Fe
Salina, Kansas 67401

James F. Greenwood, M.D.
207 N. Main
Ulysses, Kansas 67880

Michael J. McKenna, M.D.
102 S. Judson Street
Fort Scott, Kansas 66701



Announcements

Professional meetings, conferences, and postgraduate courses of national importance are listed for the Doctor's Calendar. Notice of the session is posted in advance to allow the physician time to make preparations.

NOVEMBER

- Nov. 25 AMA Conference on Utilization Review—*Problems and Promise*, Shamrock Hilton, Houston. Contact: AMA, Dept. of Hospitals and Medical Facilities, 535 N. Dearborn, Chicago 60610.
- Nov. 26-29 AMA 21st Clinical Convention, Astorhall, Houston. Exec. Vice President: F. J. L. Blasingame, M.D., 535 N. Dearborn, Chicago 60610.
- Nov. 26 AMA National Conference on Medical Aspects of Sports, Hotel Americana, Houston. Contact: AMA, Committee on the Medical Aspects of Sports, 535 N. Dearborn, Chicago 60610.

DECEMBER

- Dec. 6-8 Kansas City Society of Ophthalmology and Otolaryngology, Plaza Inn Motel, Kansas City, Missouri. Guest speakers include John Dyer, M.D., Rochester; Richard Buckingham, M.D., Park Ridge, Illinois; Joseph Goldman, M.D., Mount Sinai, New York; and Leslie Bernstein, M.D., University of Iowa. Write: Samuel Kantor, M.D., Suite 428, Rockhill Medical Building, 6700 Troost, Kansas City, Missouri 64131.

1968

JANUARY

- Jan. 11-13 First Internal Conference on Prematurity, sponsored by the AMA committee on Maternal and Child Care, Ft. Lauderdale, Florida. For information write Wesley J. Duiker, Secretary, Committee on Maternal and Child Care, AMA, 535 N. Dearborn, Chicago 60610.

- Jan. 14-18 Society for Cryo-Ophthalmology, Miami Beach. Contact: Dr. John G. Bellows, Secretary, 30 N. Michigan, Chicago 60602.
- Jan. 19-20 13th interim scientific session, American Rheumatism Association, sponsored by the Arthritis Foundation. Sheraton-Belvedere Hotel, Baltimore. Write: Miss Margaret M. Walsh, 1212 Avenue of the Americas, New York City 10036.
- Jan. 25-27 Midwinter Cancer Seminar, sponsored by the American Cancer Society, Colorado Division, Vail, Colorado.
- Jan. 19-20 New Concepts in Problems of Completed Stroke, presented by the American Rehabilitation Foundation. 16 hours credit, AAGP approved. Write: Thomas P. Anderson, M.D., Kenney Rehabilitation Institute, 1800 Chicago Ave., Minneapolis 55404.

POSTGRADUATE COURSES

University of Colorado:

- Dec. 6-8 *Modern Concepts of Allergy*
- Jan. 14-20 *Annual General Practice Review*

For further information, write the Office of Postgraduate Medical Education, University of Colorado School of Medicine, 4200 E. Ninth Avenue, Denver 80220.

University of Kansas:

- Nov. 29-Dec. 1 *Medical Technology*
- Dec. 11-12 *Gynecology and Obstetrics*

For further information write the Department of Postgraduate Medical Education, University of Kansas School of Medicine, 39th and Rainbow Boulevard, Kansas City, Kansas 66103.

(Continued on page 444)

Along the Bookshelf

Clendening Medical Library

RECENT ACQUISITIONS

- Association for Research in Nervous and Mental Disease. Sleep and altered states of consciousness. Williams & Wilkins, 1967.
- Basmajian, J. V. Muscles alive: their functions revealed by electromyography. Williams & Wilkins, 1967.
- Berger, John. A fortunate man; the story of a country doctor. Holt, Rinehart and Winston, 1967.
- Berger, Alfred. Drugs affecting the peripheral nervous system. Dekker, 1967.
- Dolan, Joseph P. Treatment and prevention of athletic injuries. Interstate Printers and Publishers, 1967.
- Fisher, Alexander A. Contact dermatitis. Lea & Febiger, 1967.
- Kansas. University, School of Medicine. Dept. of Post Graduate Medical Education. Post Graduate Medical Study. Epilepsy, syncope, and related conditions, 1967.
- Kearns, John E. Treatment of hyperthyroidism with radioactive iodine; a twenty-year review. Thomas, 1967.
- Krantz, John C., Jr. Profiles of medical science and inspired moments. John C. Krantz, Jr., 1967.
- Leonard, Calista V. Understanding and preventing suicide. Thomas, 1967.
- Maurer, David W. Narcotics and narcotic addiction. Thomas, 1967.
- Olansky, Sidney. Syphilis—rediscovered. Year Book Medical Publishers, 1967.
- Poverty and Mental Health. Edited by Milton Greenblatt *et al*., American Psychiatric Association, 1967.
- Rabkin, Leslie Y. Sourcebook in abnormal psychology. Houghton Mifflin, 1967.
- Schulman, Jerome L. Management of emotional disorders in pediatric practice, with a focus on techniques of interviewing. Year Book Medical Publishers, 1967.
- Seegers, Walter Henry. Blood clotting enzymology. Academic, 1967.
- Sewell, William H. Surgery for acquired coronary disease. Thomas, 1967.
- Snapper, Isadore. Bedside medicine. Grune & Stratton, 1967.
- Wolfe, John N. Mammography. Thomas, 1967.

Book Reviews

CECIL-LOEB TEXTBOOK OF MEDICINE (12th edition) edited by Paul B. Beeson and Walsh McDermott. W. B. Saunders Company, Philadelphia, 1967. 1,738 pages illustrated. \$20.50 single volume; \$24.50, two-volume set.

I have reviewed the latest edition of *Cecil-Loeb Textbook of Medicine*, which is the 12th edition of a book first written exactly 40 years ago.

Since that time, of course, medicine has progressed to a point where no one person could possibly write the entire text of this book. Of the 169 contributors to the present edition, 52 are new, replacing a like number who have retired. The book has some new sections which were not included or necessary before. There has been some rearrangement in the contents of the book; 226 of the articles are newly written and 57 are on subjects not included in the previous edition.

I read through at least four sections of the book to see how it had been handled this time, and the arrangement is easy to follow. The discourses are very easy to understand and there is nothing extra written into the articles. It has been pruned down to the essentials and yet all of the information seems to have been incorporated.

It is a very readable book and a very helpful one.
—C.A.N.

NEURO-OPHTHALMOLOGY (Symposium of the University of Miami and the Bascom Palmer Eye Institute), Volume III, edited by J. Lawson Smith. C. V. Mosby Company, St. Louis, 1967. 348 pages illustrated. \$25.00.

This volume presents the material discussed at the third post-graduate symposium on clinical neuro-ophthalmology by the Department of Ophthalmology, University of Miami School of Medicine, held in January, 1966. The book is divided up into the various lectures, most of which are rather highly specialized in the field of neuro-ophthalmology in children. There is a long discussion on the neuro-radiographic findings in these conditions and perhaps a more detailed description of some very rare clinical entities than might be found in most standard texts.

—B.J.A.

KANSAS STATE DEPARTMENT OF HEALTH

Division of Preventable Diseases—Division of Vital Statistics—Kansas Morbidity Incidence
Summary of Cases Reported in July, 1967 and 1966

Diseases	July		5-Year Median 1963-1967	January-July, Inclusive		1963-1967 5-year Median
	1967	1966		1967	1966	
Amebiasis	5	2	1	11	6	11
Aseptic meningitis	1	—	—	1	—	1
Brucellosis	—	—	—	—	3	3
Diphtheria	—	—	—	—	—	—
Encephalitis, prim., infect.	2	1	2	5	2	6
Encephalitis, post-infect.	1	—	*	2	—	*
Gonorrhea	402	285	285	2,309	1,753	1,753
Hepatitis, infectious	20	11	20	111	110	152
Meningococcal meningitis	—	1	1	7	10	10
Pertussis	2	3	3	5	11	11
Poliomyelitis	1	—	—	1	—	—
Rheumatic fever	—	—	—	2	—	2
Salmonellosis	26	29	26	121	121	121
Scarlet fever	—	—	—	52	77	65
Shigellosis	4	7	7	22	41	41
Streptococcal infections	95	94	94	1,703	1,563	1,563
Syphilis	104	82	82	680	691	661
Tinea capitis	11	—	11	41	26	41
Tuberculosis	17	22	22	149	183	158
Tularemia	1	—	—	10	—	4
Typhoid fever	—	—	—	1	2	1

* Statistics for 5-year median not available

PLAGUE

ELBERT COUNTY, COLORADO

A 12-year-old boy living on a ranch 18 miles south of Strasburg, Colorado, died July 17, of bubonic plague with fulminating plague septicemia. On July 12 he had killed a prairie dog by stabbing it with his pocket knife. He carried the prairie dog home to show it to his parents and later buried it. The prairie dog colony was near his home. The parents had noticed a rather sudden cessation of activity in the prairie dog colony for several days, leading them to believe the animals were sick and a "die-off" had occurred.

The boy became ill on July 14 with temperature of 105°F., right submandibular glandular swelling and severe prostration. The parents phoned a physician that day who advised repeated enemas to reduce the fever. The following day the boy was taken to the doctor at which time he had a temperature of 100°F. and seemed only moderately ill although he had an angry red throat and right submaxillary adenopathy. A throat culture was taken (subsequently reported negative for b-hemolytic strep) and treatment with

tetracycline plus lincocin was initiated.

On July 17 the patient was gravely ill and on telephonic advice of another physician the parents started with him to Children's Hospital, Denver. The party was met on the road south of Strasburg by a physician from Strasburg, by prearrangement. This physician pronounced the boy dead. He suspected plague as the cause of death by reason of the history of exposure to a prairie dog in a "die-off" area, the presence of cutaneous petechiae and glandular involvement and so notified this department the morning of July 17.

An epidemiologist and an entomologist were sent to the ranch involved to collect fleas from the prairie dog burrows for testing for plague and to collect rodents from the area for study on the morning of July 17.

The U. S. Public Health Service Plague Laboratory, San Francisco, confirmed the diagnosis of Bubonic Plague with fulminating plague septicemia on the basis of positive stained smears and positive Fluorescent Antibody tests from post-mortem specimens submitted from the fatal case.—*Colorado Morbidity Report*, August, 1967.

Announcements

(Continued from page 441)

University of Nebraska:

Dec. 8-9 *Infectious Diseases and Immunology*

For further information write the Department for Continuing Education, University of Nebraska College of Medicine, Omaha.

Jan. 10-12 An intensive program on *Current Concepts in Cardiology*, with emphasis on coronary disease, indication and management of valvular replacement, diagnosis and management of cardiac arrhythmias, vectorcardiography and applied cardiovascular physiology is being offered by the Institute for Cardiovascular Diseases, Good Samaritan Hospital, Phoenix, Arizona. For information write: Mr. William B. Nelligan, Executive Director, American College of Cardiology, 9650 Rockville Pike, Washington, D. C. 20015.

Jan. 17-19 *Symposium on Nuclear Medicine*, St. Louis. Faculty to be comprised of staff of the Mallinckrodt Institute of Radiology, Washington University Medical School and 15 visiting lecturers. The symposium will be composed of two parts: Introduction to Nuclear Medicine and Progress in Nuclear Medicine. For information write E. James Pothchen, M.D., Director, Nuclear Medicine, Washington University School of Medicine, St. Louis 63110.

SYNTEX SPEAKER SERVICE

A nationwide speaker service has been inaugurated by Syntex Laboratories, Inc. as a special service to medical and community organizations. Speakers are available to state and county medical groups for their programs or to accept speaking engagements arranged by these organizations or their members.

The speakers have been selected from field managerial personnel. The subject of their first program is the population explosion, which President Johnson has called "humanity's greatest challenge . . . second only to the search for peace." "Two's Company, Three Billion's a Crowd," comments on how a world which cannot now support its population of three billion must look forward to accommodating twice that many people by the year 2,000.

Speakers are available for day or evening meetings by writing or telephoning the Syntex Speaker Service, Public Relations Department, Syntex Laboratories, Inc., Palo Alto, California (415) 327-0110.

NEW PROSTHETIC DEVICES

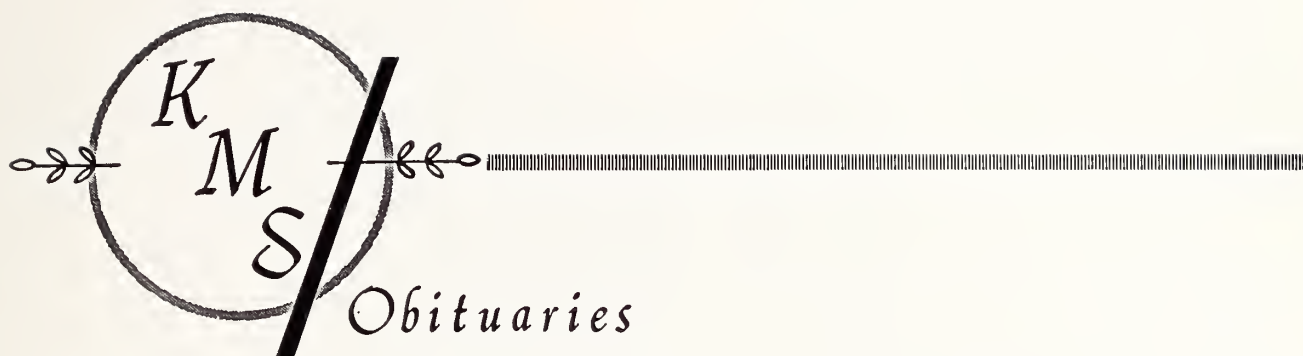
Revolutionary new prosthetic devices that can be used successfully by thousands of paraplegics and other persons with few useful muscles are predicted as one long range outcome of a research project into nerve-muscle relationships, it is announced by the Easter Seal Research Foundation.

The project, headed by Lloyd D. Partridge, Ph.D., associate professor, University of Tennessee Medical Units, Memphis, is financed by a three-year \$30,000 grant from the Easter Seal Research Foundation. The research, which employed control engineering and computer techniques, disproved the commonly held theory that muscles, in order to move loads, require all of their direction from the nervous system, specifically the tiny sensory nerve ends in muscle tissue known as spindles.

Dr. Partridge and his associates, applying modern technological processes found that instead of relying only on signals from the nervous system, the muscles have within themselves much basic control of their positioning. To substitute for these muscles, prosthetic devices will have to be developed that have some of this control built in instead of relying entirely on the nervous system signals. After testing along traditional lines to find the relationships between nerve and muscle signals, Dr. Partridge then set out to try new methods, feeding signals from computers directly into muscles of research animals. The muscle response was accurate even when loads on the muscle were changed so drastically that accepted theory would have predicted errors in response 10,000 times as great as found. The muscle itself had made the necessary corrections.

"It has long been assumed that the nerve spindle—the nerve endings in the muscle that carry signals to the central nervous system—was essential in determining the position taken by the muscle in moving different loads and in making the various adjustments involved in any action," Dr. Partridge explained. "Our research has shown that the muscle within itself has much of the basic control and can adjust its response for different loads without added direction of signals fed by the nervous system. This knowledge can mean great improvements and innovations in the design and the mechanisms of prosthetic devices in which the muscle is called upon to determine the action of the device. We hope it will lead to extensive changes and improvements and more active and useful lives for persons with certain kinds of handicaps."

The Easter Seal Research Foundation helps finance projects in major universities, hospitals and other institutions, all directed toward finding causes and means of alleviating or preventing crippling conditions. It is supported by the annual Easter Seal Campaign.



J. GORDON CLAYPOOL, M.D.

Dr. J. Gordon Claypool, 50, Howard, died on September 22, 1967, at the Newton Memorial Hospital in Winfield.

He was born in Kansas City, Kansas, on October 8, 1916, and received his medical degree from the University of Kansas School of Medicine in 1941. After completing his internship and residency training, he moved to Howard in 1947. At the time of his death, Dr. Claypool was second vice president of the Society, a member of the Board of Blue Shield, and a member of the Coroner's Association.

Survivors include his wife, two sons and a daughter.

L. CLAIRE HAYS, M.D.

Dr. L. Claire Hays, Cedar Vale, died on October 1, 1967, at the Hays Hospital in Cedar Vale. He was 60 years old.

Dr. Hays was born September 1, 1907, at Peru, Kansas. He was graduated from the University of Kansas School of Medicine in 1932 and interned at the University of Kansas Medical Center. He went to Cedar Vale in 1933 and continued practicing there until his death.

Dr. Hays is survived by his wife and son.

GEORGE W. RICHARDS, M.D.

Dr. George W. Richards, 99, died on September 30, 1967, at Mount St. Joseph's Home in Kansas City, Kansas, where he had lived since 1947.

Dr. Richards was born in Canton, Ohio, on June 24, 1868. He was graduated from the University Medical College of Kansas City, Missouri, in 1892, and for many years was a general practitioner in Kansas City, Kansas. He retired in 1947.

There are no close relatives living.

The Kansas Medical Society—1967-1968

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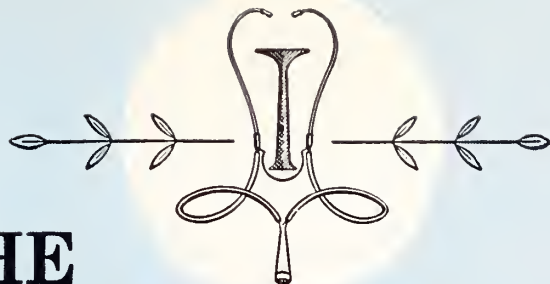
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The JOURNAL of the KANSAS MEDICAL SOCIETY

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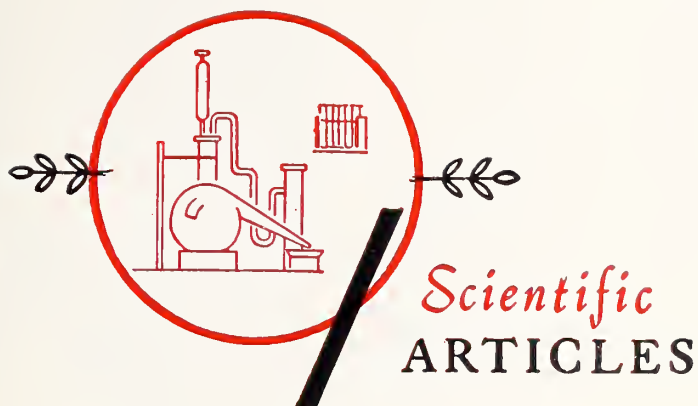
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Cytomegalic Inclusion Disease

—A Case Report

HERBERT R. GOLDBERG, M.D.,*
HERBERT E. BEAUCHAMP, B.A.,† and
W. P. CALLAHAN, JR., M.D.,‡ *Wichita*

Introduction

CYTOMEGALIC INCLUSION DISEASE is an infrequent viral infection producing signs and symptoms predominately in newborns and infants. Viral inclusions and changes similar to those seen in cytomegalic disease have been reported in routine autopsies in adults but without producing clinical manifestations. The characteristic pathologic changes are intranuclear or intracytoplasmic viral inclusions in isolated cells, or clumps of cells. Similar inclusion bodies and cellular and nuclear giantism can be produced by inoculation of appropriate tissue cultures with the virus. The virus may be isolated from the viscera and urine of affected infants but the identification is laborious and costly. The principal organs which are involved are the liver, kidneys, intestines, brain, salivary glands and spleen. The kidneys are a frequent site of infection and cells containing intranuclear or intracytoplasmic inclusions can be identified in the urine. Since many of the viscera may be involved in the disease a wide variety of clinical manifestations may be presented to the clinician so that it must be considered in the differential diagnosis of many disease states.

The following instance of cytomegalic inclusion disease was unusual in that multiple examinations of urine sediment failed to disclose inclusion bodies

but the virus was isolated and identified by tissue culture and confirmed on post-mortem examination.

A case of cytomegalic inclusion disease in a premature infant is reported. Clinical, pathological and laboratory findings are described. It is of interest and significance that cytomegalovirus was isolated from the urine and that tubular epithelium of kidneys contained numerous diagnostic cells even though intranuclear inclusion bodies in urine sediments were not demonstrated.

Case Report[§]

R. C. B., Jr., was delivered in the USAF Hospital at McConnell Air Force Base in Wichita, Kansas, on June 7, 1963. The mother was a 22-year-old white woman, gravida II, group O, Rh negative. The mother's serological tests for syphilis were negative. She had received two units of compatible blood on May 28, 1963, because of bleeding from a partial placenta previa. She had been treated for what was diagnosed as a urinary tract infection and received Achromycin and Furadantin from May 26, 1963, until the date of delivery.

* Pediatrician, 3333 E. Central, Wichita, Kansas.

† St. Francis Hospital, Virology Laboratory.

‡ St. Joseph Hospital, Department of Pathology.

§ From Base Hospital, McConnell AFB, and Department of Pathology, St. Francis Hospital, Wichita, Kansas.

The baby was delivered premature at 26 weeks gestation, weighing four pounds, three ounces; Apgar was scored at 4. The infant required nasopharyngeal suction and direct laryngoscopy to establish proper aeration, which ensued within two minutes. The infant also received 1:1000 adrenalin and caffeine sodium benzoate in the delivery room. Prolonged bleeding was noted from the injection sites. The mother did not have a past history of thrombocytopenia or of thrombocytopenia during pregnancy.

The infant was placed in an isolette with full humidity, temperature at 88° F., and 4 liters of oxygen. On examination, the liver and spleen were both noted to be 2.0 cm below the costal margins. Thoraco-abdominal breathing was noted and the heart rate was recorded over 100 per minute. Chest x-ray was negative. Blood studies revealed a WBC of 20,400 with a differentiation of 8 neutrophils, 5 bands and 87 lymphocytes. The hematocrit was 37. Anisocytosis and poikilocytosis and a few nucleated rbc's were noted on peripheral smear. Platelet count was 40,000/cu. mm. The infant was group O, Rh positive and the Coombs reaction on cord blood was negative. Coagulation time was 4½ minutes, bleeding time (capillary tube method) over 15 minutes, fibrinogen level 300 mgms per cent, VDRL was negative. Bone marrow aspiration reported as showing "normoblastic hyperplasia with rather hypocellular marrow."

Because of the thrombocytopenia and respiratory distress, the infant was treated with aqueous penicillin, Kanamycin and Solucortef; 2.5 mgms of vitamin K was given. Clinical icterus was noted within the first 24 hours of life along with moderate tremulousness. Blood studies done at that time revealed: total bilirubin 5.5 mgms per cent, direct bilirubin 3.3 mgms per cent, blood glucose 75 mgms per cent, blood calcium 6.1 mEq/l. A blood culture was reported as showing no growth. Three urine specimens were collected for examination for cytomegalic inclusion bodies and blood was drawn from mother and infant and sent for toxoplasmosis complement fixation and dye studies.

Progression of clinical icterus was noted during the five days that the infant survived. The infant received two supplemental transfusions of whole blood, 40 cc. on June 7 and 25 cc. on June 8, 1963. This resulted in transient elevation of the hemoglobin. The platelet count never rose above 60,000; however, the bleeding time returned to normal within four to six hours after birth. The infant was digitalized on June 8 with slight resulting improvement in its respiratory distress. On June 12, after almost four fairly stable days, the infant exhibited increasing respiratory distress with more pronounced retractions, inability to maintain Similac with iron feedings, increasing restlessness, abdominal disten-

tion, and apparent increased splenomegaly. An electrocardiogram and repeat chest x-ray were within normal limits for age. Skull films were negative. A few hours later, generalized tonic-clonic convulsive episodes were noted, these could not be completely controlled in spite of paraldehyde and phenobarbital intramuscularly, or calcium gluconate, 50 per cent glucose, and pyridoxine given intravenously. The infant died at 10:45 a.m. on June 12, 1963, despite vigorous resuscitative measures. Blood drawn just prior to death revealed a hematocrit of 35, platelet count 26,000 and a total bilirubin of 15.5 mgms per cent. Toxoplasmosis dye tests were later returned as negative in both mother and infant.

Autopsy Report:*

External Appearance: The body is that of a newborn Caucasian male infant of several days' age, of premature appearance, weighing 1,640 grams, having a crown-rump length of 29 cm and a crown-heel length of 41 cm. The body shows diffuse petechial and tiny ecchymotic zones throughout the skin surface involving the head, trunk and extremities (*Figure 1*). The head is not remarkable. External congenital abnormalities are not observed. The left testicle is palpated in the inguinal canal, the right testicle is not palpated. The umbilical stump is very short and partially dried and retracted.

Body Wall and Cavities: Entrance to the cavities is made through a "Y" incision. The peritoneal cavity contains a small amount of fluid and soft dark red clotted blood, the peritoneal lining appearing smooth and glistening throughout without gross evidence as to the source of the bloody fluid. Pleural cavities are not remarkable nor is the pericardial sac. The thymus is very small, weighing 1 gram, and on section is of a reddish-gray appearance having an elastic consistency. The peritoneal lining as well as the serosal lining of the pleural cavities and pericardial sac have a light yellowish tint similar to that observed on the skin surface.

Heart: Weighs 20 grams having a smooth epicardium, the myocardium being reddish-brown and of elastic consistency, the right and left ventricular walls being of equal thickness measuring 0.5 cm. The valves are not remarkable nor is the interventricular septum. The foramen ovale is slightly probe patent having slit-like aperture well overlapped by septum primum and septum secundum. The ductus arteriosus is patent and not otherwise remarkable.

Lungs: The lungs weigh 40 grams and there are diffuse foci of hemorrhage in the parenchyma on cut section. The largest of these zones measures 2.0

* Performed by Robert C. Goering, M.D., at St. Joseph's Hospital and Rehabilitation Center, Wichita, Kansas.



Figure 1. Infant R.C.B. at 96 hours of age showing generalized purpuric manifestation.

cm in diameter. The parenchyma is seen to float in water when sectioned. Trachea and larger bronchi are not otherwise remarkable.

Gastro-Intestinal Tract: Sections through the esophagus are not remarkable. Focal tiny areas of apparent hemorrhage are noted within the wall of the stomach which do not bulge the mucosa nor serosa and are represented by a thin reddish line, the largest measuring up to 0.6 cm in greatest dimensions. Similar foci of hemorrhage are noted within the small intestine being somewhat more prominent in the colon. These areas do not alter the mucosal pattern on gross examination and meconium fecal material is noted.

Spleen: Weighs 8 grams having a smooth serosa, the parenchyma being of a reddish-blue color on section, and is not otherwise remarkable.

Liver: Weighs 110 grams having a light yellowish-green tint, the capsule being smooth, the sectioned surfaces being of similar color. The gallbladder and bile ducts appear patent.

Pancreas: Weighs 5 grams and on section is not remarkable.

Kidneys: Each weighs 7.5 grams and shows fetal lobulation, the capsule stripping with ease leaving a smooth surface. The cortical medullary junction is not remarkable. The ureters and urinary bladder are not remarkable. The right testicle is found immediately internal to the internal orifice of the inguinal canal. The kidneys when further sectioned show slight congestion only.

Adrenals: Each measures up to $3.0 \times 2.5 \times 0.3$ cm in greatest dimensions and on section shows prominent congestive change only on gross examination.

Central Nervous System: Entrance to the intracranial cavity is made through the usual biauricular incision. The calvarium is entered by bilateral flaps so as to preserve the falx cerebri and tentorium cerebelli. These on examination appear intact and free fluid within the subdural space is clear. The brain when extracted weighs 187 grams, having a normal appearing configuration. The blood vessels appear slightly congested over the parietal areas. The temporal lobes bilaterally suggest slight focal hemorrhage of punctiform type. The cerebellum shows focal zones of hemorrhage measuring up to 0.6 cm which are noted beneath the leptomeningeal membrane. The brain is placed in fixative prior to further study. Sections through brain after fixation shows evidence of softened surfaces with scattered petechiae. A cystic zone is noted on the inferior and posterior portion of the left frontal lobe measuring 2.2 cm with a slight amount of soft dark red clotted blood therein. The cerebral hemispheres have scattered punctiform yellowish zones throughout, being more prominent around ventricular spaces. The pons evidences minute petechiae. The cerebellum is very soft, being of a yellowish light green color with loss of usual gross detail on the left. The medulla and upper cord are not grossly remarkable. The sections are held for further fixation.

Microscopic Description

Heart: The myocardium is of characteristic fetal appearance. There is no cellular infiltration on the endocardial or epicardial surfaces or within the interstitial tissue. Cross striations and intercalated discs are distinct and nuclear pattern is constant.

Lungs: Multiple sections of the lungs show edema of the interstitial tissue, congestion of the vascular channels and engorgement with red blood cells. There are a few foci of hemorrhage within some of the alveoli. There are other focal zones in which there is collapse of the alveolar walls with obliteration of the alveolar spaces. There are a few infiltrations within the septa walls with mononuclear cells.

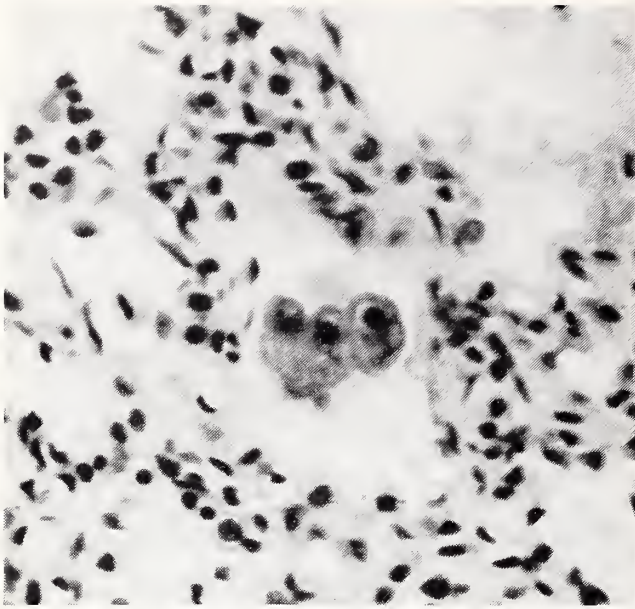


Figure 2. (Path. Lungs.)

There are also numerous alveolar spaces which contain non-nucleated eosinophilic material. Throughout the interstitial tissue and within the alveolar are large cells with a macronuclei and containing intranuclear basophilic staining inclusion bodies (*Figure 2*).

Spleen: The follicles appear normal. There is slight dilatation of sinusoids and hyperplasia of the reticulo-endothelial cells. There are a few focal collections of extramedullary hematopoiesis within the stroma.

Liver: The capsule appears normal. Within the portal spaces there are large cells containing intranuclear inclusions similar to those seen within the lungs (*Figure 3*). There is no increase in connective tissue within the portal spaces nor other cellular infiltration. The hepatic cell cords are arranged in a reg-

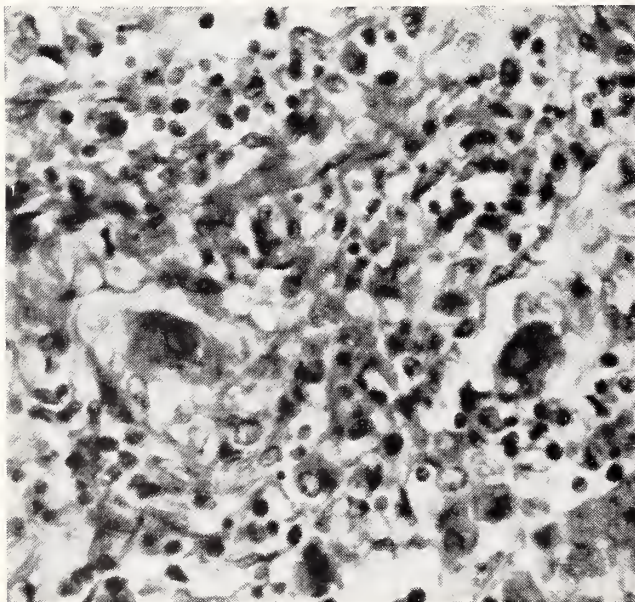


Figure 3. (Path. Liver.)

ular pattern. There is a small amount of inspissated bile pigment within the bile canaliculi.

Thymus: Multiple sections show the architectural pattern to be normal. The stroma shows slight hyperplasia and a few collections of extramedullary hemopoiesis.

Pancreas: Within the pancreatic parenchyma and within many of the acinar elements are scattered large cells containing intranuclear inclusion bodies. These are similar to those seen within the lungs and liver. There is no increase in connective tissue nor other cellular infiltration.

Kidneys: The glomeruli have retained their fetal appearance. There is engorgement of the vascular channels with red blood cells. Within many of the convoluted tubules, there are large cells with intra-

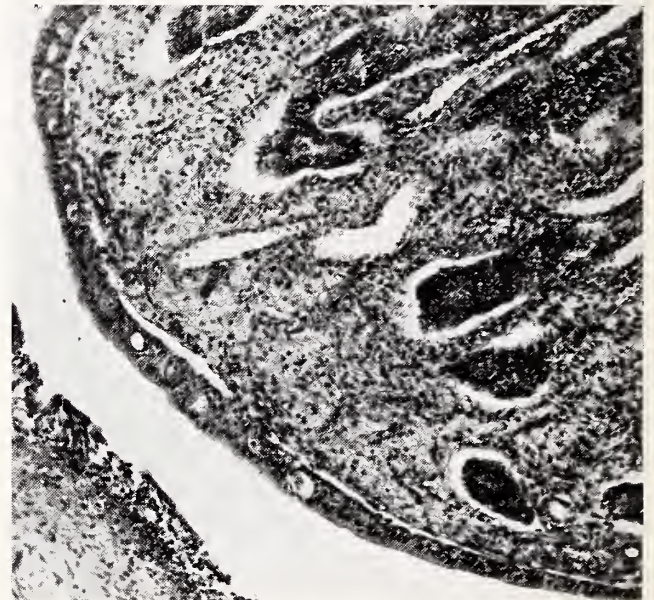


Figure 4. (Path. Kidneys.)

nuclear inclusions similar to those seen within the lungs, liver, and pancreas. In the tips of the renal pyramids the transitional epithelium lining the calyces contain numerous intranuclear and intracytoplasmic inclusion bodies (*Figure 4*).

Adrenal Glands: There is neonatal involution of the adrenal glands with minute foci of hemorrhage within the medullary portion.

Central Nervous System: Multiple sections of the brain, including the brain stem, the basal ganglia, the pons, the cerebral cortex, the cerebellum, and the medulla oblongata show a few small focal zones of hemorrhage and necrosis with infiltration with polymorphonuclear leukocytes and a few surrounding mononuclear cells. Adjacent to the foci of necrosis, there are large cells with intranuclear inclusion and

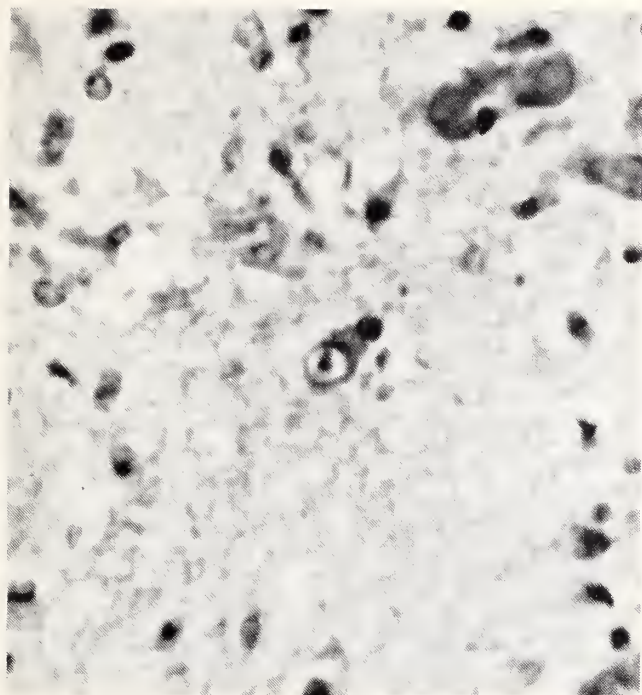


Figure 5. (Path. Brain.)

some which have cytoplasmic inclusion (Figure 5). There is some calcification within the walls of the vascular channels within the brain. The lumina, however, are patent. There is intense congestion of the vascular channels with red blood cells throughout the central nervous system.

Exfoliative Cytology—Virus Isolation

Three urine specimens were collected on successive days. Urine sediments collected from the total volume of first specimen and from one-half volume of the second and third specimens were applied to albuminized slides and examined for diagnostic intranuclear inclusions according to standard techniques.^{4, 5, 6} Urines were processed immediately upon arrival at the laboratory. Cells from urine sediments did not contain inclusion bodies.

The remaining urine from second and third specimens was combined with sorbitol,⁸ frozen at -24°C ., and used for virus isolation. After three days storage, the urine was thawed, supernatant and sediment collected,⁸ and treated with 1,000 units of penicillin and 1,000 micrograms of streptomycin. Supernatant and sediment were inoculated separately into human foreskin leighton tube 1, 2 tissue cultures in 0.1 milliliter volumes. On the eleventh day after inoculation, cytopathogenic effect consisting of foci of enlarged cells was observed in tubes inoculated with urine supernatant. Identical cytopathogenic effect was observed in tubes inoculated with urine sediment after 21 days incubation. Prominent granular degeneration was observed in central areas of focal cytopathogenic effect in both sediment and supernatant inoculated tubes. Stained coverslips from inoculated tubes con-



Figure 6. Foreskin tissue culture cells containing intranuclear inclusion bodies surrounded by a clear halo with masses of basophilic material at periphery of halo. $\times 2000$. H and E stain.

tained enlarged cells with one or more inclusions within a clear halo (Figure 6). Masses of basophilic material were present at periphery of the halo, and the cytoplasm of some cells contained an indistinct eosinophilic mass (Figure 7). Cytopathogenic effect



Figure 7. Foreskin tissue culture cells containing intranuclear inclusion bodies surrounded by clear halo and cytoplasmic mass in paranuclear position. $\times 2000$. H and E stain.

progressed slowly so that after a total of 30 days incubation only one-half of the cell sheet was involved. Multinucleated giant cells were not observed in tissue cultures inoculated with urine supernatant or sediment. Control cultures remained free of cytopathogenic effects and cellular degeneration during the examination period.

Virus Identification

The cytopathogenic effect produced by cytomegalovirus in tissue culture is generally considered to be sufficiently characteristic for virus identification.^{9, 10}

Other viruses producing intranuclear inclusions in foreskin tissue cultures include measles, *Herpesvirus hominis* and varicella-herpes zoster virus (viruses). Cytopathogenic effect produced by measles virus consists of multinucleated giant cell formation¹² while *Herpesvirus hominis* produces a rapidly progressing cytopathogenic effect.^{10, 13, 14} Varicella-herpes zoster virus (viruses) produces cytopathogenic effect similar to that observed but without prominent granular degeneration.¹⁴ The occasional multinucleated giant cell formation reported to occur in varicella-herpes zoster infected tissue cultures³ was not observed in our cultures.

The virus isolated from urine produced cytopathogenic effect compatible with that reported for cytomegalovirus in tissue culture^{10, 11, 14} and virus identification is made on that basis.

Comment

The presence of inclusion containing cells in the tubular epithelium of kidneys together with isolation of virus from urine appears to contradict the absence of diagnostic cells in the urine sediment. Extensive re-examination of slides under oil immersion failed to detect inclusion containing cells.

Approximately 40 per cent of infants with cytomegalic inclusion disease do not excrete diagnostic cells in their urine.⁹ Isolation of cytomegalovirus from a number of infants whose urines were negative for diagnostic cells has been reported.^{8, 14} However, only one infant died and kidney pathology was not described.

Slides containing urine sediment were placed in fixative before complete drying to avoid excessive artifact formation.¹⁵ Since positive urines rarely contain more than two or three diagnostic cells,⁷ the possibility that diagnostic cells were present but were lost during centrifugation or fixation and staining of slides must be considered.¹⁵ Collection of cells from urine using filtration techniques^{7, 15} seems indicated. The small number of diagnostic cells excreted would also indicate that entire volumes of urine specimens should be examined for inclusion containing cells

with additional urine specimens collected for isolation attempts.

The assistance of Miss K. Hartong (ASCP) in preparation and staining of tissue cultures and urine sediments is gratefully acknowledged.

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Techniques in Pathology

Cryostat Frozen Sections

ANTONIO HUAMAN, M.D.,* *Topeka*

HISTOLOGIC DIAGNOSIS has been practiced in the United States of America since the beginning of the present century.¹ Its usefulness, however, has been hampered by technical difficulties until the introduction of the cryostat in surgical pathology.² Although cryostat sections are now a matter of standard practice, little information has been available beyond that in the specialized journals. Therefore, a short description of the instrument, the procedure for biopsy examination and some commentaries from our experience may prove informative for clinical practitioners, medical administrators and medical technologists.

Equipment and Materials

The Cryostat: The first cryostat was built by Linderstrom and Lang for exclusive use in histochemical work. Pathologists, however, soon envisioned that a similar instrument would improve the quality of frozen sections; among these pioneers, Chang, Ibanez and Russell have undoubtedly made the more consistent contributions. They introduced substantial modifications in the construction of cryostats,³ adapted the pertinent histologic techniques, and for many years now, have organized courses to train pathologists and medical technologists in the operation of the instrument.⁴ At the present time cryostats are easily available from several manufacturers, who have further perfected their models and provided more maneuverability and durability at a more reasonable cost.

The cryostat essentially is a microtome installed in a refrigerated chamber. The microtome is built of rustproof materials; it is equipped with an exchangeable knife, a cutting platform which is operated from outside the refrigerated chamber, and an anti-roll device. Late models are also equipped with a quick freeze attachment consisting of blocks of thermophilic metal or a container with liquid nitrogen or dry ice. The refrigerated chamber is a freezer large enough to house the microtome and to allow its operation; the temperature should be kept constant at -20°C to -30°C .

Materials: The materials utilized in the preparation of cryostat frozen sections are usually available at any histologic laboratory—glass slides, cover-slips, dehydrants, clearing and staining solutions and mounting media. During the last few years, two new elements have come into use: a water soluble inclusion medium and a freezing spray. The inclusion medium is a polyglycolic compound with a freezing point

Histopathologic diagnosis has been updated by the use of cryostat frozen sections in surgical pathology. With the ease of operation and the simplicity of the histologic technique, permanent slides for microscopic examination can be prepared in about five minutes, enabling the pathologist to provide opportune diagnosis of surgical and medical disease. Furthermore, cryostat frozen sections are indispensable for enzymatic and histochemical studies and have great potential for newer diagnostic procedures, such as immunofluorescence and radioautography.

similar to human tissues (OCT, Embedding Matrix). The freezing spray substitutes the quick freeze attachment.

Technique for Fast Hematoxylin-Eosin Staining

Cryostat sections can be stained by any one of the current histologic techniques with only slight modifications. For urgent diagnosis of biopsies, we prefer the hematoxylin-eosin method over polychrome or fluorochromatic staining, yet being able to report our diagnosis in about six minutes; besides, the slides are kept as a permanent record of the examination. At our laboratory the following steps are followed:⁵

Selection of the Tissue Block: The gross examination of the specimen is the most important step during any pathologic examination because it identifies the lesion and narrows the diagnosis to fewer pos-

* From Lattimore-Fink Laboratories and Saint Francis Hospital, Topeka, Kansas. Reprint requests to Medical Arts Building, Topeka, Kansas 66604.

sibilities. A diagnostic block of tissue is selected; it should measure approximately 2 × 2 × 5 cm. Small specimens, such as uterine curettings, must be embedded in polyglycolic media.

Freezing: Freezing of the specimen should be accomplished in the shortest time possible to prevent destruction of the cells and the structure of the tissues. Fortunately, this is possible by the use of the quick-freeze mechanism or the freezing spray.

Sectioning: Sections are cut at six or eight microns in thickness. At this point, we must consider the optimum cutting temperature of the particular tissue. The instrument manuals usually include detailed guide tables, but the following observations may prove useful: If the temperature is colder than that actually required, the sections will pulverize at the edge of the knife; conversely, if the temperature is not cold enough, the sections will wrinkle, shrink and thaw. The sections will come out intact, without wrinkles and with the same outline as the tissue block, only when the temperature is within the appropriate range. Another consideration, the key to the obtaining of good sections, is maintenance of an even temperature in the refrigerated chamber, the tissue block, the knife and the anti-roll device, necessitating closing of the chamber for a few seconds before attempting any new sectioning.

Recovery of the Section: Ideally, the sections are either sliced off the tissue block and rest upon the

surface of the knife or are gently spread over it by means of a camel hair brush. In either case, the section is preferably recovered on an albumin-coated slide that is maintained at room temperature. This step requires utmost care in order to prevent artifacts. As soon as the section is recovered, it should be immersed in the fixative solution.

Staining: The solutions are set in tall coupling jars in the order indicated in *Table 1*. After complete clearing in xylene, the section is mounted and is ready for microscopic examination.

Commentaries

Cryostat sections demonstrate the tissue architecture, the cellular detail and the patterns of neoplastic growth with a high degree of accuracy, no longer requiring confirmation by paraffin sections. This technical quality, coupled with the short time required for the preparation of a section, has been widely accepted, to the extent that cryostats have practically replaced carbon dioxide microtomes in most hospitals throughout the United States of America.

Cryostat sections are chiefly used for quick diagnosis of cancer.⁶ It is now common practice to obtain a surgical biopsy, study it by frozen section, and with the histologic diagnosis on hand, proceed with the radical excision or terminate surgery in favor of another therapeutic procedure more suitable to the

TABLE 1
HEMATOXYLIN-EOSIN STAINING

Jar Solution		Formula	Length of Immersion	
1	Fixative	Ethanol 95%	75.0 ml.	30 seconds
		Formalin 10%	25.0 ml.	
2	Tap water			8 dips
3	Hematoxylin ⁷	Hematoxylin (crystals)	10.0 gm.	30 seconds
		Absolute ethanol	100.0 ml.	
		Ammonium alum	100.0 gm.	
		Distilled water	1000.0 ml.	
		Red mercuric oxide	2.5 gm.	
4	Tap water			8 dips
5	Alkaline bath	Tap water	100.0 ml.	8 dips
		Ammonia	1.0 ml.	
6	Eosin	Eosin Y	1.0 gm.	5 seconds
		Ethanol 70%	100.0 ml.	
7	Solvex*			8 dips
8	Solvex			8 dips
9	Solvex/xylene	Solvex	50.0 ml.	8 dips
		Xylene	50.0 ml.	
10	Xylene			8 dips

* Manufactured by the Technicon Company, Chauncey, New York.

histologic type and the extensiveness of the neoplasm. On the other hand, the processing of lymph nodes, bone marrow and needle biopsies no longer presents a problem; likewise, diseases commonly considered the domain of the internist can be diagnosed within a few minutes. In surgery, as well as in medicine, the pathologist can now provide an accurate and timely diagnosis thus enabling physicians to choose the treatment on more solid scientific grounds.

The usefulness of the cryostat is not confined to quick diagnosis. In routine surgical pathology and autopsy pathology, it can effectively substitute for the paraffin sections, especially in small hospitals. In large institutions, however, the conventional methods still adapt themselves better to large workloads and to the ordinary working hours. In histochemistry and enzymology, frozen sections are indispensable because they preserve the chemical composition of the organic tissues. These disciplines are now practical diagnostic tools, thanks to the development of cryostat sections and section-freeze substitution,⁴ allowing enzymatic demonstrations within hours instead of days of meticulous work. In the near future, other laboratory techniques, such as immunofluorescence and radioautography, will probably benefit from the utilization of cryostat frozen sections, thereby contributing to a better correlation of the histologic, enzymatic, chemical and immunologic aspects of health and disease.

The technical advantages, however, must be supplemented by administrative considerations if the maximum benefit is to be obtained. Frozen sections are no longer a sporadic activity of the pathology department; instead, a clinical service on its own merit. Technically, the frozen section service is the responsibility of the pathologist, but physically it must be located within the surgical unit, facilitating exchange of information between surgeons and pathologists and assurance of a quick diagnosis. Nothing is more deplorable than the waste of time incurred when the surgical department and the laboratory are located far apart. It is most important that a room within the surgical wing be equipped with instruments for frozen sections and faster means of communication with the operating rooms. A cryostat, a potent microscope, a vacuum tube system to transport the specimen from the operating room and a "hot line" to report the diagnosis should be standard equipment. If the type and size of the institution can afford it, a closed circuit television will considerably increase communication between surgeons and pathologists. Undoubtedly, this would be a great asset in teaching institutions.

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HELP FIGHT TUBERCULOSIS AND OTHER RESPIRATORY DISEASES



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Deformed Legs

Congenital Pseudarthrosis of the Tibia

HENRY O. MARSH, M.D.,* and RUBEN PECHERO, M.D.,† *Wichita*

IN 1708, HOTZOECHER WROTE the first description of congenital pseudarthrosis of the tibia and attributed the condition to intra-uterine trauma. Numerous theories regarding the etiology have been advanced since then: heredity, genetic aberrations, and endocrine, metabolic, nutritional, and local disturbances of bone growth due to tumor or mechanical factors. McFarland has stated that mechanical factors of growth and stress are responsible. The physical stress placed on the convex surface of the bowed bone results in bone destruction faster than the reparative healing process on the concave side. Duraiswami produced angulation in the distal one-third of a chick by injecting compounds into the embryo three to six days after the beginning of incubation. The deformity produced had most of the features of congenital pseudarthrosis of the tibia. The substances used included insulin, thallium, nitrate, saluseptasin, and benzol alcohol.

The commonly accepted theory regards congenital pseudarthrosis as a part of the syndrome of neurofibromatosis. Ducroquet, in 1937, was the first to link these two conditions. Boyd reported that in 50 per cent of their cases this association existed. In two of the eight cases of our series, tissue removed from the fracture site was diagnosed as being neurofibromatous. Jaffe states that it is difficult to determine microscopically that tissue from the fracture site is neurofibromatous. He believes that the lesion is one expression of a mesodermal defect associated with a more complicated basic neuro-ectodermal defect. Aegeter agrees that a close relationship exists between neurofibromatosis and pseudarthrosis of the tibia but does not accept the histological diagnosis of material from congenital pseudarthrosis as being neurofibromatous. In 1950, he reported 15 cases of congenital pseudarthrosis of the tibia and diagnosed the pathologic specimens as being hamartomatous proliferation of fibrous tissue. He also pointed out the close similarity of three conditions: fibrous dysplasia, neurofibromatosis, and congenital pseudarthrosis.

This is all quite interesting and academic, but the final clinical picture resolves itself into failure of a section of tibia to produce normal bone and to heal. The lesion is not apical as with a tumor such as an enchondroma where after fracture or surgical exci-

sion the lesion heals promptly. In pseudarthrosis there must be a diffuse lesion (*Figure 1*), for even after such drastic procedures as block excision, reversal of segments of bone, and crossleg bone grafts, nonunion is frequent. Certainly the bone is defective bone in

Eight cases of congenital pseudarthrosis of the tibia have been treated at St. Francis and Wesley Hospitals, Wichita, Kansas, during the past 20 years. It is our purpose to present a brief résumé of the intriguing but perplexing problems presented by this condition.

some vital aspect and does not withstand relatively minor trauma, even after apparently successful healing, for refracture is a constant danger and easily occurs.



Figure 1. Case 5, W. J. Material from apex of lesion. This photomicrograph shows fibrous connective tissue replacement of the normal bone trabeculae at the site of congenital pseudarthrosis. F: Fibrous tissue. BT: Bone tissue.

* Department of Orthopedics, the Wichita Clinic; Chief of Orthopedic Residency Program, St. Francis Hospital, Wichita.

† Orthopedic Resident, St. Francis Hospital, Wichita.

Danger of refracture persists after successful bone grafting as long as the x-ray reveals sclerotic narrowing of the medullary canal in the involved area and any significant degree of bowing. Prophylactic surgery probably should be done at this time using a bypass bone graft bridging the concave side (McFarland). Refracture should be avoided at almost any cost.

Nonunions have resulted from ill-advised tibial osteotomies to correct angulation. Such procedures are probably initiated without proper appreciation of the underlying process. The problem is simply precipitated by the surgeon's substituting a surgical fracture for the pathologic fracture.

The patient cannot be considered cured until skeletal maturity is achieved or the condition is corrected on x-ray by the restoration of the medullary canal and the sclerotic bone has been replaced with normal bone.

Clinically, congenital pseudarthrosis of the tibia is classified into four types (Codivilla and Henderson):

1. Bowing without fracture which is present at birth (most common).
2. Fracture which occurs early in childhood and results in pseudarthrosis.

3. Pseudarthrosis at birth (rare).

4. Pseudarthrosis occurring in late childhood or adolescence.

Radiographically, the findings of congenital pseudarthrosis are pathognomonic:

1. Tibial bowing with an anterior convexity, usually at the junction of the middle and lower thirds.
2. Fibula may or may not be bowed.
3. Sclerotic bone is present at the apex of the bowing.
4. As the bowing increases, the medullary cavity disappears in both AP and lateral projections.
5. Fracture occurs at apex of the bowing and appears first as a transverse line.
6. As the pseudarthrosis becomes firmly established, the sclerosed bone ends become pointed and acquire a "sucked candy" appearance.
7. The bone above and below the area of sclerosis is osteoporotic.

Case Reports

The following cases were treated between 1947 and 1967 at St. Francis and Wesley Hospitals, Wichita, Kansas.

Case 1: J. F. (H. O. A.) A seven-month-old white female was seen on November 12, 1948 (*Figure 2*), with anterior bowing of the lower third of the tibia

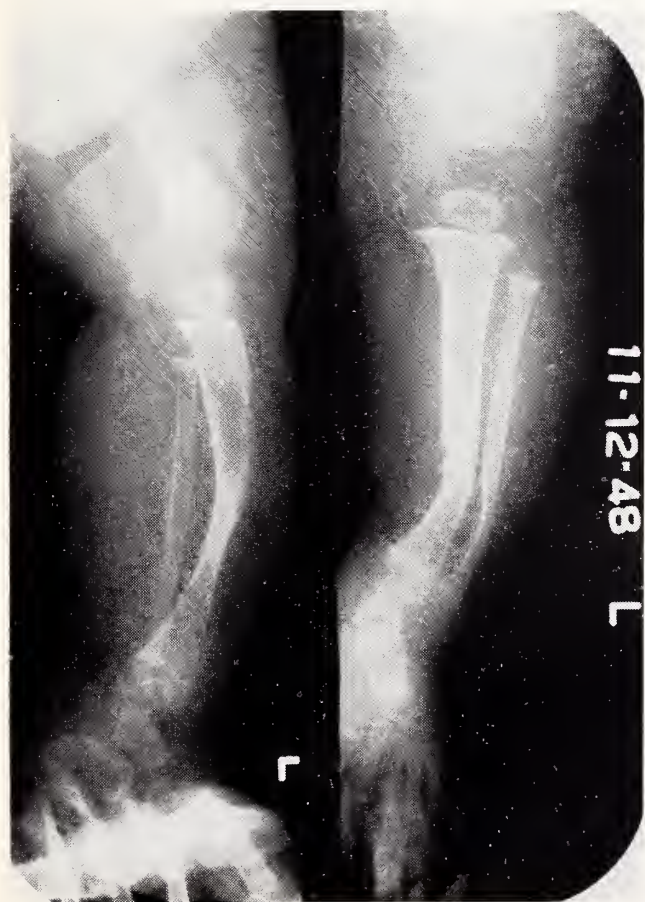


Figure 2. Case 1, J. F. Bowing, sclerosis and loss of medullary canal evident on x-ray at seven months of age.



Figure 3. Case 1, J. F. Age three. After second bone graft. Strips of bank bone placed about lesion and intramedullary Steinmann pin.

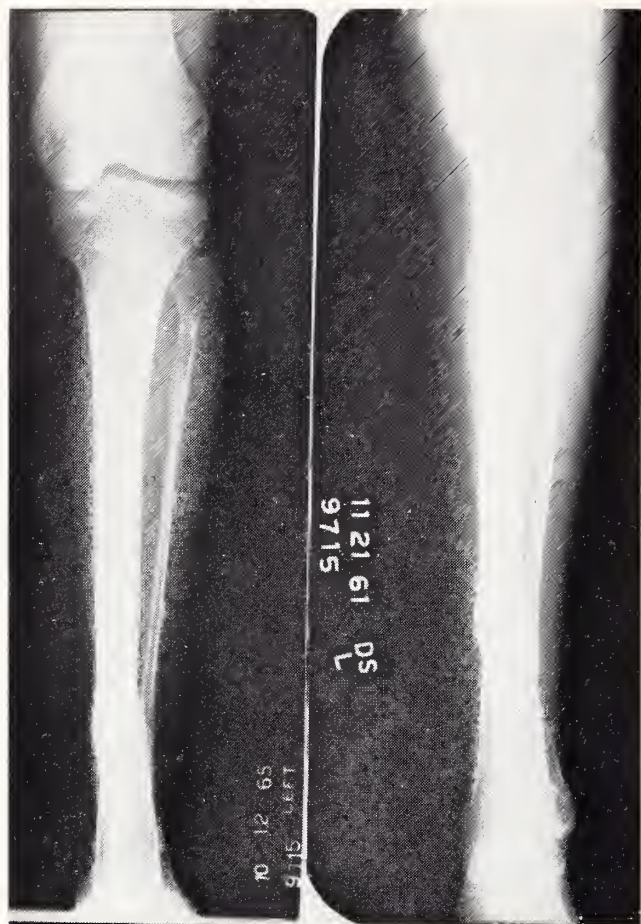


Figure 4. Case 1, J. F. Age 12. Tibia solid. Spontaneous healing after manual osteoclasia.

which had been noticed at birth. Shortly thereafter, she sustained a fracture which was grafted with bone from the father's ilium. In June, 1949, the fracture was considered healed, but the patient refused to walk on the unprotected extremity. A long-leg brace was applied for ten months. Fourteen months later, the tibia refractured at the site of the previous pseudarthrosis. In 1951 (Figure 3), a Steinmann pin was inserted as an intramedullary nail and the lesion was grafted with bank bone. The fracture was considered healed two months later when good callous was present, but a few days later the leg refractured. A third bone grafting operation was done with iliac bone from the father, but this failed. The case was presented at an orthopedic conference to discuss the merits of amputation. Conservative care was advised, and the patient was again placed in a long-leg brace. Scoliosis developed, and two spinal fusions were subsequently done on July 20, 1954, and October 18, 1955. X-rays during this period showed the pseudarthrosis of the tibia to be unchanged. In 1959, a manual osteoclasia was done to correct the angulation. Four months later, the tibia was solid. At this time, cafe au lait spots were obvious over the entire body. In 1960, a lower femoral epiphyseal arrest was done

to correct a leg length discrepancy of one inch. Since 1961 (Figure 4), the tibia has remained solid. The patient, age 19, has obvious neurofibromatosis (Figure 5), but is leading a normal active life.

Case 2: A. B. (J. F. L. and H. O. M.) This one-year-old white male, when seen on August 27, 1948, had a fracture of the tibia. A bone graft, done without fixation, failed. One year later, a second bone graft was done using iliac bone from the father. Screws were used for internal fixation. In December, 1955, the patient was considered healed, both clinically and roentgenographically, but he fell 26 days later and fractured through the graft. He was grafted a third time with bank bone. Four months later there was free motion at the site of fracture. Avascular bone fragments were removed and a Steinmann pin inserted for intramedullary fixation. The fracture was again grafted with bank bone. This failed, and at age nine the leg was amputated. When last seen, the prosthesis was functioning well and the patient was physically active.

Case 3: K. G. (J. F. L.) A white male, born January 31, 1958, was seen at two months of age for



Figure 5. Case 1, J. F. Age 19. Diffuse cafe au lait spots indicating relationship with neurofibromatosis.

an increasing curve of the right tibia. At three and one-half months of age, a bone graft was done using bone from the father's iliac crest, and the concave side of the tibia was packed with cancellous bone. Six weeks postoperatively, the patient died—cause unknown.

Case 4: L. T. (H. O. M.) This two-year-old white female was first seen on February 4, 1954. The patient had first been diagnosed as a case of rickets. The mother had then been told that the deformity was secondary to an undiagnosed fracture. There was obvious abnormal anterior bowing of the lower third of the left tibia, and the leg was one-half inch short. In May, 1957, the patient fell and fractured the tibia through the sclerotic bone at the apex of the curve. The fracture was immobilized for two months during which time there was no evidence of callous formation. A bone graft was performed using bank bone. Since there was no evidence of healing after four months, a second bone graft was performed, this time using an intramedullary Küntschnner nail. Nine months later, the fracture was solid and the intramedullary nail was removed. Four months later, the tibia refractured (*Figure 6*). A Lottes nail was then inserted through the tibia and intentionally across the ankle joint into the talus, and an autogenous iliac bone graft was performed. Healing was slow, but two years later the fracture was solid. The patient now had pain in the ankle. The nail was extracted, freeing the ankle joint. One year later, an ankle fusion

was necessary because of degenerative traumatic arthritis. In 1963, the patient refractured the tibia for the fourth time through the sclerotic bone. A new intramedullary nail was again inserted, traversing the ankle and into the talus; the fracture healed (*Figure 7*). One year later, the patient developed a hairline fatigue fracture about the intramedullary nail at the old fracture site. She was allowed to continue normal use within the limitation of pain, and the fracture healed without surgical intervention. In 1967, she is normally active, although she walks with a slight limp and there is mild angulation at the fracture site about the nail (*Figure 8*).

Case 5: W. J. (R. A. R. and C. D. H.) This two-month-old Negro male was first seen on March 23, 1963. Anterior bowing at the lower third of the right tibia had been noted at birth. There were widespread non-elevated pigmented areas involving the skin of the trunk and extremities. Similar lesions had been present on the maternal side of the family for the preceding three generations. At three years of age (January 22, 1966) the patient sustained a fracture at the site of the tibial angulation. This was immobilized in a plaster cast for two months, but he developed a typical, nonpainful pseudarthrosis of the tibia and fibula. An open reduction was performed using a Rush nail and bone from the mother's iliac crest. Eighteen months later, the fracture was clinically solid and a medullary cavity had formed.

Case 6: R. E. (H. O. A.) This seven-year-old

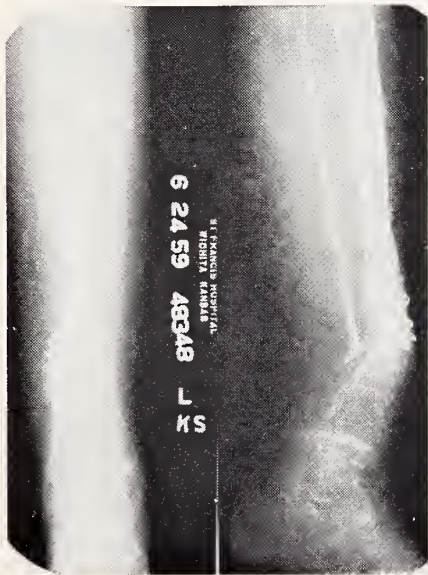


Figure 6. Case 4, L. T. Age 7. Fracture after second surgical procedure. Kuntschnner nail has been removed.



Figure 7. Case 4, L. T. Age 11. Third intramedullary fixation. Ankle has been fused due to traumatic arthritis. Healing fatigue fracture is evident on lateral view.



Figure 8. Case 4, L. T. Age 15. Final clinical result. Occasional slight discomfort in area of previous fractures which may represent hairline fatigue fractures. Patient is fully active.

TABLE 1

Name	Sex	Birth Date	Age First Noted by Parents	First X-ray	Primary Treatment	Secondary Treatment	Comments	Grade
J. F.	F	1948	7 mo.	7 mo.	Open reduction; bone graft from father's ilium 1948	1) Intramedullary nail with bank bone graft 1950 2) Bone graft from father 1951 3) Long-leg brace, 8 years 4) Osteoclasia to correct angulation 1959	Bone union; slight limp; normally active.	Good
A. B.	M	1947	1 yr.	1 yr.	Bone graft without internal fixation 1948	1) Screws for internal fixation plus iliac bone from father 1949 2) Bone grafting with bank bone 1951 3) Internal fixation with Steinmann pin and bank bone 1951 4) Amputation	Last exam 1954; using a prosthesis.	Failure
K. C.	M	1958	2 mo.	2 mo.	Bone graft from father's ilium without internal fixation	None	Expired six weeks postoperatively	Died
L. T.	F	1950	2 yrs. previous diagnosis of rickets	4 yrs.	Bone bank graft without internal fixation 1957	1) Bank bone graft with intramedullary nail 2) Lottes nail with autogenous bone graft 1958 3) Lottes nail with bone graft 1963	X-ray, hairline crack, area of fracture; arthrodesis of ankle.	Good
W. J.	M	1963	2 mo.	2 mo.	Rush nail with bone graft from mother's ilium 1966	None	Union 1967	Good
R. E.		1952	3 mo.	3 yrs.	Denis Browne splint 1952	1) Varus osteotomy 1955 2) Bone graft 1956 3) Bone graft from mother 1958 4) Autogenous bone graft 1961 5) Amputation 1961	Nonunion followed by amputation; using prosthesis; last exam 1966.	Failure
L. M.	F	1946	16 mo.	16 mo.	Osteotomy 1948	1) Bone graft 1949 2) Sequestrectomy 1951 3) Autogenous bone graft 1953 4) Amputation 1955	Nonunion followed by amputation; last exam 1967.	Failure
J. D.	M	1945	22 mo.	22 mo.	Bone graft with correction of angulation 1948	Bone graft from mother without internal fixation 1949	Union; last seen 1951.	Good

white male had been treated for a bowed tibia from three to twelve months of age, using a Denis Browne splint. The bowing of the left leg gradually increased, and at three years of age an osteotomy was done to correct the "varus." The pseudarthrosis which resulted was grafted with bone from the normal leg. A plaster cast was worn for six months and a long-leg brace was applied for the ensuing 15 months. The leg failed to heal. Two years later, a second bone grafting operation was done using bone from the mother's tibia, and he was casted again for nine months. Failure again resulted, and in April 1961, a third bone graft was done using autogenous iliac bone. This failed, and in November 1961, a below-knee amputation was done at the Mayo Clinic.

Case 7: L. M. (A. E. B.) This 16-month-old white female was first seen on December 27, 1948, for a fracture through the sclerotic bowed area of the tibia. An osteotomy was done through the upper portion of the curvature to correct the angulation, and she was placed in a cast. Six months later, bone grafting was necessary for a nonunion; and 18 months later, a sequestrectomy was necessary to remove dead bone. Two years later (1953), the fibula was used as a bone graft. This failed, and two years later the leg was amputated below the knee. The patient, a college student, was last examined in February, 1966. She is normally active.

Case 8: J. D. (H. O. A.) This 22-month-old white male was first seen in November, 1947, with anterior bowing of the right tibia and one-half inch shortening. In June, 1948, while playing, he sustained a fracture at the apex of the angulation. The angulation was corrected and a bone graft applied. Six months later there was evident nonunion, and casting was discontinued. A massive maternal iliac bone graft was applied to the area in barrel stave fashion. The fracture was solid five months later. Two years later, the patient was asymptomatic, although the anterior bowing persisted. He has remained asymptomatic since that time and functions in a wage-earning capacity.

Treatment

In evaluating results of treatment for congenital pseudarthrosis of the tibia, two main factors must be considered: (1) End result studies made before skeletal maturity or complete roentgenographic normalcy is achieved are not reliable because of the frequency of refracture. (2) The question of social and economic rehabilitation must be thoroughly weighed. It is of little value to have a short, deformed, nonweight-bearing extremity after years of treatment. It is far better to have a normal appearing, well fitting prosthesis. Until recently, surgery was intentionally postponed until the child was three to five years of age. This permitted atrophy, shortening,

and increased deformity to occur. Present practice is to initiate treatment as soon as anesthesia and surgery will be tolerated, thus preventing as much as possible these undesirable defects. Early and continued use of the extremity will minimize atrophy of disuse.

Many surgical procedures have been advanced in the past 25 years, but none has withstood the test of time occasioned by the vagaries of the condition. Early intramedullary nailing and bone grafting currently appear to be the best approach. Sofield believes that amputation should be deferred as long as possible, as there is an improved chance of obtaining union in an older child, and a "moderately" deformed short leg is better than a prosthesis.

Intermedullary fixation (Charnley and Sofield) has the advantage over other types of internal fixation, as alignment of bone is maintained even in the presence of a refracture. Damage to the ankle or distal tibial epiphysis may occur with intramedullary fixation if the ankle or epiphysis is penetrated to obtain increased purchase on the distal fragment. Following a surgical failure, the limb should be braced to permit active use, thus preventing angulation and atrophy of disuse. Leg shortening of more than three inches, severe anterior bowing, severe foot deformity, or a small, weak tibia which will obviously refracture easily are factors to evaluate when considering amputation.

Review of our eight cases and the literature indicates that the preferred treatment is intramedullary fixation and bone grafting with autogenous bone. Homogenous bone grafts from the parent are not as successful, since a certain percentage of grafts will be rejected and absorbed. Some of this is undoubtedly due to immunological factors. Bone bank bone is a poor third choice (*Table 1*).

Conclusions

1. The etiological factor or factors in congenital pseudarthrosis of the tibia are unknown.
2. Treatment of choice is intramedullary nailing and autogenous bone grafting.
3. In these patients, roentgenographic and clinical follow-up should be carried out until skeletal maturity is achieved both clinically and roentgenographically.
4. Prophylactic operative intervention is recommended when sclerotic narrowing and obliteration of the medullary canal is associated with anterior bowing without fractures.
5. Osteotomy through a bowed, narrowed, sclerotic area should not be done as this may precipitate a pseudarthrosis.
6. For patients who have marked shortening, major deformity, or associated malformations, amputation may be the logical procedure.

7. A prosthesis may permit better function than that obtained by multiple surgical procedures.

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THE PHYSICIAN'S CAREER: A NEW AMA PUBLICATION

Despite the remarkable changes which have occurred in patterns of medical practice, the enormous expansion of professional and occupational resources on the allied health team and the explosive growth of community health services involved in total health care within the past generation, few changes have been made in the medical school curriculum to help prepare the new physician to grasp, appreciate and meet these accelerating socio-economic challenges once he enters practice.

As a step toward surmounting this educational void, the American Medical Association has developed a new publication, *The Physician's Career*, a 99-page handbook intended to serve as a teaching outline on medical practice and community relations for physicians and medical students.

More than two years in the making, *The Physician's Career* was the direct result of suggestions made at recent meetings of the House of Delegates that teaching outlines of informative material on medical ethics, medical civics and socio-economic aspects of medical

practice be provided to medical schools and medical societies for orienting students and recent graduates to non-scientific aspects of the physician's career.

Fifteen AMA departments and a task force of staff consultants cooperated in producing *The Physician's Career*, the most significant publication covering this broad subject since Joseph Garland, M.D., Boston, introduced *The Physician and His Practice* in 1954. Henry F. Howe, M.D., Director of the Department of Occupational Health, served as coordinating editor.

Prepared in narrative outline form, *The Physician's Career* is comprised of 15 chapters, divided into two parts—The Practice of Medicine and The Physician in the Total Community.

The handbook focuses upon the sharp transition which has occurred since two generations ago when the unaided physician was almost the only health resource in the community.

It calls attention to the fact that the short-term general hospital, once a place of last refuge for the terminally ill, has emerged into a highly organized, complex institution serving as a center of medical practice and providing the supporting services demanded by modern medical care.

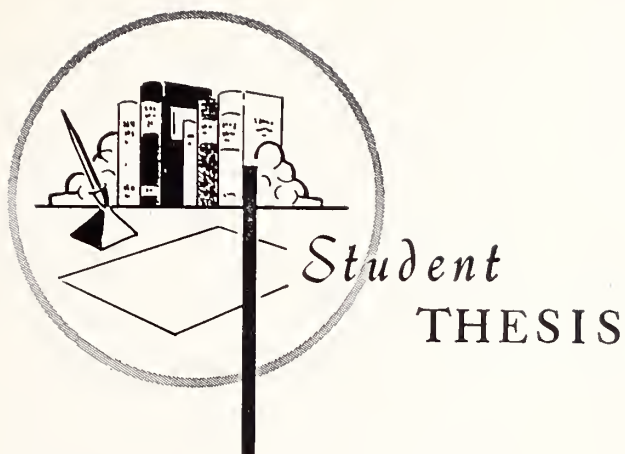
A major change, it points out, is the rapid evolution of group practice. Since 1948, when 3,493 physicians practiced in 368 groups, the number in group practice had more than septupled to approximately 26,000 by 1965 and is continuing to accelerate, according to preliminary information gathered in a detailed survey now being conducted by the AMA.

Chapter topics of Part One are Patterns of Medical Practice, Licensure and Accreditations, Organizations of the Health Professions, Medical Ethics, Medical Staff Organization and Responsibilities, Teaching and Research, Business Aspects of Medical Practice and Medicolegal Obligations and Relations.

Chapter topics of Part Two are Community Health Services, Voluntary Health Agencies, Governmental Health Programs, The Modern Public Health Movement, Voluntary Health Insurance and Prepayment Plans, Medical Cultism and Quackery, and Personal, Family and Civic Responsibilities.

The AMA is encouraging state and county medical societies to utilize *The Physician's Career* as a springboard of ideas for orientation seminars for newly installed members. Copies are being provided free to members of this year's senior medical school classes. Review copies are being sent to all state and county medical societies and medical schools.

For others, single copies are available at 75 cents each from the AMA Order Department (90 cents to those in all countries except the U. S., its possessions, Canada and Mexico). A reduced price of 45 cents a copy has been set for medical students, interns and residents.



Migraine and Associated Cerebral Variants

RICHARD A. ARMS, M.D.,* *Detroit, Michigan*

THE TERM "MIGRAINE" applies to a type of headache involving one-half of the cranium, preceded by a visual aura, accompanied by nausea and vomiting, and presumably related to an abnormal vascular physiology. This illness is quite ancient as it was probably known to the Egyptians as early as 12 B.C., but was first adequately described by the Greeks (Ara-teaus of Cappadocia) in the first century. This paper will consider the speculated pathophysiology of migraine headache, and the relationship of the central nervous system to migraine with emphasis on the various forms of cerebral variants.

Pathologic Physiology

The pathophysiology of migraine headache has been extensively studied by Wolff and associates. Presently there is a good deal of evidence that the vascular dysfunction associated with migraine is due to vasodilatation of arteries probably following a phase of vasoconstriction. The vessels involved in this illness are largely the external and internal carotid arteries, the basilar systems, and the arteries of the Circle of Willis. Ostfeld divided migraine headache attack into three clinical phases—the pre-headache, headache, and immediate post-headache phases—and felt that these phases corresponded with the accepted mechanism of migraine headache.

* This is one of a group of theses written by fourth year students at the University of Kansas School of Medicine, selected for publication by the Editorial Board from a group judged to be the best by the faculty at the school. Dr. Arms recently completed his internship at Henry Ford Hospital, Detroit, Michigan.

PRE-HEADACHE PHASE:

This phase often, but certainly not invariably, precedes the headache proper. Probably about 17 to 20 per cent of patients with migraine experience pre-headache phenomena, although Wolff thought this figure to be only about 10 per cent. The symptoms in this phase are usually visual, including scotomata, hemianopsia, and scintillations, and are felt to result from dysfunction of intracranial vessels, in contrast to the headache phenomena which result mainly from dilatation of extracranial vessels. Wolff believes that the visual prodromata of the headache are due to cerebral vascular involvement rather than vascular dysfunction within the retina or orbit—evidence for this theory being the following:

1. During the attack of scotomata there is usually sparing of central vision.
2. The homogenous quadrant defects that are experienced could readily result from a single defect in the visual cerebral cortex, whereas it would be necessary to postulate a bizarre arrangement of multiple defects in the retina.
3. In his study of 618 persons with migraine headache, Alvarez found that the pre-headache phenomena persisted in those persons who, for various reasons, no longer had functioning eyes.

The mechanism of this pre-headache phase of visual symptoms is generally regarded as being due to vasoconstriction, evidence for this theory being quite varied:

1. Because the bulbar conjunctival vessels are readily accessible, and are often involved in migraine,

the sensitivity of these vessels to norepinephrine, a potent vasoconstrictor agent with minimal metabolic effects, was observed by means of a slit lamp. It has been found that the degree of bulbar conjunctival ischemia and the sensitivity to topical norepinephrine is increased during the time the patient is experiencing the pre-headache phenomena.

2. The most convincing evidence, observed by several investigators, is that vasodilator agents such as amyl nitrite and carbon dioxide when administered to the patient will result in an amelioration of the various pre-headache phenomena; on the other hand, vasoconstrictor agents often will induce the occurrence of scotomata and other visual disturbances leading to the inference that the mechanism of such disturbances is intimately linked with cranial vasoconstriction.

HEADACHE PHASE:

It is now thought that the mechanism of the headache is due to vasodilatation which occurs, as previously mentioned, in the extracerebral vessels both large and small. There is a good deal of pharmacological evidence to confirm this hypothesis:

1. The administration of vasoconstrictor agents such as ergotamine tartrate and norepinephrine during the headache have been shown to be effective in relieving the pain.

2. Ostfeld has shown that it is possible to induce migraine headaches by the administration of vasodilator agents such as nitroglycerine. Furthermore, Ray has demonstrated that by injecting saline into the temporal artery, thereby increasing the intramural pressure and distending the artery, typical migraine-like pain can be reproduced.

3. Wolff studied the appearance and behavior of the small vessels of the bulbar conjunctivae in 33 patients during the headache state. He found that at the onset of the headache there was almost invariably a dilatation of arterioles and venules and an increase in the number of visible capillaries on the headache side as compared with the headache-free side. He also found that the sensitivity to locally applied norepinephrine was decreased in these vessels during headache attacks. The fact that the bulbar vessels are less readily constricted and more easily dilated during headache periods seems to support the theory that the vasodilatation is an active process maintained possibly by the local effects of a pain-threshold-lowering and vasodilating substance or substances whose actions are antagonized directly by norepinephrine.

IMMEDIATE POST-HEADACHE PHASE:

Following migrainous headaches certain local phenomena are often most apparent; local tenderness and edema, and small vessel dilatation are the most

common observable changes. As alluded to previously, there is a hypothesis that these events are due primarily to the local accumulation of an unknown substance first called "headache stuff" for lack of better terminology. Most evidence exists to support the presence of such a substance:

1. Tunis found, by using a Lucite-tipped rod attached to a spring gauge to assess deep pain, that the scalp was tender in those areas where migraine headache was perceived, and that the lowered deep pain threshold often outlasted the headache by hours and occasionally days; furthermore, pitting edema was usually present in those areas.

2. By biopsy study of the temporal arteries during headache, Ostfeld and Chapman showed perivascular and areolar edema as compared with those removed from the unaffected side.

3. The injection of the spreading factor hyaluronidase into the tender scalp area during headache has resulted in an area of lowered pain threshold up to four times larger than the original.

4. Wolff made perfusates of the scalp from two subjects during a migraine attack by injecting 2 cc. of sterile isotonic saline into the area of head pain, and the same amount into the headache-free area, and withdrawing the solution. The withdrawn fluid from the headache side was injected into one forearm, and that from the headache-free side into the other. He found that the site injected with headache fluid demonstrated considerably more erythema and had a lowered pain threshold of about 15 per cent compared with the opposite control arm.

These and other experiments support the theory that during the headache a humoral agent is released locally which, in some manner, interacts with arterial dilatation to produce scalp edema, tenderness, and head pain. Ostfeld states that if a single such substance exists it must fulfill the following criteria:

1. Natural occurrence in man;

2. The capacity to produce arteriolar and venous dilatation in the relevant vascular beds;

3. The capacity to induce minimal reversible tissue damage and local tenderness without cellular infiltration;

4. Increased concentration locally during and after headache, but not at other times;

5. When coupled with induced extracranial vasodilation, its local administration should cause a headache like that of migraine.

Although many substances have been implicated as the "headache stuff," those that are more likely include acetylcholine, substance P, adenosine triphosphate, bradykinin, serotonin, and neurokinin.

Attempts to identify the headache substance have largely consisted of obtaining subcutaneous perfusates from the painful head areas in patients during headache attacks. Various bioassays have been per-

formed on the perfusate and a comparison of properties of this substance with other known substances is relatively well established. It is believed that the "headache substance" is a polypeptide. Chapman *et al.* have found that the activity of the "headache substance" could not be blocked by antagonists of serotonin, adenosine triphosphate, substance P, acetylcholine or histamine. Furthermore, when the perfusate is boiled the depressor action of the substance on blood pressure is substantially reduced. This suggests that in addition to the polypeptide, headache fluid contains a proteolytic enzyme capable of forming the headache substance—presumably by cleavage of a plasma globulin present in subsurface extracellular fluid. Neurokinin, in conjunction with this neurokinin-forming enzyme, is presently thought to be the most likely headache substance.

Migraine and the Central Nervous System

While classical migraine headache is commonly seen and readily diagnosed, often variants of migraine, which will be discussed later, may obscure the typical picture to such a degree that misdiagnosis occurs; unnecessary and potentially harmful procedures have been carried out in an attempt at diagnosis. Conversely, occasionally some definite disease of the brain or its coverings may present, for a time, as typical migrainous attacks. In the majority of migraine patients who exhibit signs of central nervous dysfunction in the early stage or at the height of attacks, the neurologic phenomena are of brief duration no matter how often repeated, and restitution is rapid and complete. If the prodromata of migraine are, in truth, due to intracranial vasoconstriction, clearly, a wide variety of clinical phenomena are possible depending on which area of brain is rendered ischemic. That patients who are subject to migraine are also frequently subject, at times, to periods of central nervous system dysfunction, has been shown. Vance and Klingman feel that the cerebral equivalents, while not recognized often, are almost as common as the conventional type of headache.

The association between migraine and epilepsy has been noted for a considerable length of time—the occurrence of both migraine and epilepsy in the same person being reported first between 1870 and 1890 by Liveing and Hare. In 1930 Ely reported 171 cases of epilepsy with 15.2 per cent of the group also demonstrating migraine. In a group of 783 cases of epilepsy, Paskind reports that 35.2 per cent had a history of migraine in the family, 30.8 per cent had a history of migraine in a parent, and 8.4 per cent had a history of migraine themselves. Lennox has studied extensively the relationship of migraine and epilepsy and reports that both epilepsy and migraine occurred in 9.2 per cent of a series of 240 patients with seizures.

Electroencephalographic changes in patients with migraine headache, while usually not of the type seen in epilepsy, are common. Selby and Lance in studying the electroencephalograms of 459 patients with migraine and allied vascular headache, found about 30 per cent to be abnormal—a figure that closely correlates with that of Heyck on 62 migrainous patients. In studying 51 patients with migraine headache, Dow and Whitty found that 30 cases had persistently abnormal records on repeated electroencephalograms between attacks (normal population, *i.e.*, those with no personal or family history of migraine, epilepsy, or other neurological diseases, have about a 10 to 15 per cent incidence of abnormal EEG records). Out of these 30 cases they found that 14 had a generalized, non-specific dysrhythmia; 12 had symmetrical bilateral episodic activity; while a persistent focal abnormality was noted in four. Smyth and Winter made EEG records and clinical observations from a population of 1,264 subjects comprising 1,198 patients and 66 normal adult volunteers. Of the clinical group, 202 patients were diagnosed as suffering from migraine. Forty-three per cent of these patients were described as having abnormal EEG's while resting, with 27 of the cases consisting of a delta rhythm abnormality and 59 a theta rhythm—one patient showed a spike and wave pattern. They found that the incidence of delta rhythm was significantly related to the severity of headache, length of history, and family history of migraine. Camp and Wolff have separated the electroencephalogram abnormalities into two general types:

NONFOCAL ABNORMALITIES:

The most common finding of this group is diffuse or paroxysmal 4-7 cycles per second activity in excessive amounts. This abnormality was noted between migraine attacks and is seen more frequently in those patients demonstrating focal motor, sensory, or mental symptoms as part of the migraine attack.

FOCAL ABNORMALITIES:

This group is separated into:

1. Transient focal abnormalities lasting hours or days. Symonds and Whitty have described several patients with this abnormality associated with migraine attacks and other neurological deficits.

2. Persistent focal abnormalities seen in a small percentage of patients with migraine; Selby and Lance report 15 of 139 abnormal records showing lateralizing defects. Patients with this type of EEG abnormality usually demonstrate focal clinical signs occurring as part of their headache attack.

3. Transient focal abnormalities lasting minutes which occur only during the occurrence of a focal neurological sign.

It is generally believed that many of the clinical

signs of cerebral dysfunction and concomitantly brief EEG changes are best explained on the basis of cerebral ischemia. That brief attacks of cerebral dysfunction due to ischemia would occur in migrainous patients is, of course, consistent with the hypothesis that these individuals are subject to intracranial vasoconstriction episodes as part of their disease.

Intracranial edema is also postulated as a possible underlying mechanism leading to the cerebral dysfunction seen in migraine. Cerebral edema might be expected if small vessel constriction or occlusion lasted for any prolonged period of time. Camp and Wolff feel that there is probably localized cerebral edema, but that vasoconstriction and local ischemia which initiated the migraine attack are not the sole causes; rather, they postulate that it is more likely the result of a separate neurogenic activity linked with vasodilatation and an analog to scalp edema. They further present a highly speculative line of reasoning in which the possibility of swelling of the oligodendroglia causing pressure on neurons is hypothesized. The prolonged neurological and EEG changes sometimes seen in migraine could be accounted for by slow resolution of this cerebral edema.

Persistent focal electroencephalographic abnormalities seen in some patients having focal clinical signs are probably the result of permanent cerebral damage—possibly on the basis of cerebral infarction. That small or large cerebral infarctions are occasionally precipitated by a migraine attack is an established fact. Murphy and others have reported cases of typical migraine with cerebral infarction occurring at the height of a migraine attack.

If vasoconstriction (and possibly subsequent vasodilatation) should become a more widespread intracranial process, it would involve areas for specialized functions, such as consciousness, speech, motor skill, taste, hearing, coordination, and of individual cranial nerve mechanism. A wide variety of symptoms and signs would result, and these phenomena are seen in migraine patients. The chief importance of the occurrence of these various central nervous system signs and symptoms, either before headache, or in place of it, lies in the fact that they may mimic various types of intracranial disease including epilepsy, meningitis, Meniere's disease, neuritis, neoplastic, and vascular disease.

The neurological deficit most commonly seen has been focal paresthesias which occur as a result of involvement of the parietal lobe. The sensory changes including analgesia, hyperaesthesias, and a pins-and-needles sensation frequently involve the face, hand, and often the entire side of the body. With vascular dysfunction involving the dominant temporal lobe, expressive or receptive aphasia may result. Alexia and agraphia have been observed, and syncope may be seen—a manifestation that may be confused with epi-

lepsy. Tarlau *et al.* have described a case of migraine characterized by a history of syncopal episodes that at one time presented the picture of coma with dilated fixed pupils and bilateral Babinskis raising the possibility of a space-occupying lesion or the presence of a subdural hematoma. The patient, however, became symptom-free after a ten-day period. With vascular dysfunction of the motor cortex, facial weakness, monoplegia, or hemiplegia is not uncommonly observed.

Rarely gustatory or olfactory episodes associated with migraine attacks may occur with vascular involvement of the uncinate lobes. Proctor reports of a patient with long-standing classical migraine attacks which were replaced in her forties by periods of smelling "strong gasoline."

Temporal arteritis may be somewhat difficult to differentiate from migraine with predominate vascular change over the distribution of the temporal artery. In the former, however, the "neuralgia" is usually of longer duration, and the artery is hard, nodular, and very tender.

Vance reports a very rare equivalent, that of spatial disorientation, characterized by confusion of right and left and defective appreciation of depth perception. This disorder is thought to be due to localization of the vascular dysfunction in the region of the angular gyrus.

With involvement of the thalamus and hypothalamus, loss of consciousness, clouding of consciousness, and fugue-like states may be observed. The hypothalamus may also be responsible for hyperpyrexia and unexplained fever that often is part of the migraine picture.

Involvement of the cranial nerves is not uncommon. Vance reports the recurrent appearance of Bell's Palsy in two sisters affected by migraine. Facial neuralgias in the trigeminal area frequently accompany the headache. Merritt and Friedman describe several cases of migraine accompanied by extraocular palsies—so-called ophthalmoplegic migraine. The III nerve is most commonly involved in these cases, and the pupil is usually dilated. The palsy may last up to several weeks after the headache proper has disappeared.

Another rare equivalent is cerebellar ataxia presumably due to vascular dysfunction of the cerebellar or basilar arteries—in the latter case, with involvement of the midbrain reticular formation, episodes of vertigo, ataxia, impairment of conjugate deviation of eyes, confusion, and even impaired consciousness may result.

Summary and Conclusion

The pathophysiology of migraine has been reviewed. The hypothetical vascular abnormalities of the three phases of typical migraine headache (pre-

headache, headache, and post-headache phase) have been discussed.

The relationship of the central nervous system to migraine has been discussed with emphasis on the various forms that cerebral variants may take. The interrelationship of migraine and epilepsy, and the electroencephalographic changes seen in migraine have also been discussed. The difficulty in differentiating migraine that is symptomatic of underlying disease from "pure migraine" is emphasized; however, the episodic nature of the migraine syndrome, its cyclic occurrence, and the usual beneficial relief with vasoconstrictor drugs should be of diagnostic assistance.

Although the "trigger" mechanism for migraine is unknown, evidence for vasoconstriction as the underlying mechanism of the pre-headache phase of visual phenomena is extensive and convincing, and evidence for the headache proper being due to vasodilation is even more convincing.

EDITOR'S NOTE: References may be obtained by writing the JOURNAL, 315 West 4th Street, Topeka, Kansas 66603.

NEW HEALTH CURRICULUM GETTING EXTENSIVE USE

The first education curriculum designed to provide students with the knowledge and guidelines to make informed and mature decisions regarding their health was introduced this fall in the nation's schools.

It is the result of an intensive six-year study, the School Health Education Study (SHES), a national independent group of recognized authorities in medicine, health and education.

The program is said to be the first comprehensive 12-year sequence in health education for U. S. schools, without precedence in its scope, organization, and approach. It develops an important, long-neglected subject area according to research and modern curriculum procedures and contains a newly coordinated body of knowledge and methods of teaching.

Details of the health education sequence are set forth in the basic document, "Health Education, a Conceptual Approach to Curriculum Design," published in May, 1967, by 3M Company. This hard-bound, illustrated reference book is designed as a working tool for school administrators, curriculum directors, grade and secondary school teachers, school nurses, administrators, teachers in college and university schools of education, medical and dental per-

sonnel, and those working in public and voluntary health agencies.

Dr. Herman E. Hilleboe, Delamar Professor of Public Health Practice, Columbia University, and chairman of the SHES Advisory Committee, said it will help in correcting glaring deficiencies in U. S. school health education programs and appalling misconceptions and superstitions existing among students.

The new health education course will blend some 40 major topics into a single unified subject for kindergarten through grade 12. Keyed to preparing students for full-living as mature individuals and responsible members of family, national, and international societies, its conceptual focus is on what a person should know, understand, feel, and do about health.

The program reflects the most current scientific content and new advances in methodology. The content is developed from the physical, biological and medical sciences. The methodology has its roots in psychology, sociology, and anthropology.

The SHES plan organizes teaching topics into an orderly progression through grade levels. . . . The new health education sequence includes consideration of use and abuse of the wide range of mood and behavior modifying substances; the predictability and uniqueness of growth and development; the structure and functioning of the individual; individual, family, and international responsibilities for health; environmental hazards and accidents; man, disease, and environment; family life education; personal health practices such as dental health; the use of health information, products, and services; and food selection and eating patterns.

Publication of the full program is under way. To be completed by 1971, publication will include some 254 titles (10 teaching-learning guides, 40 student reference books, 4 textbooks, 200 visual packets for overhead projection, and other special materials) . . . this four-year publishing schedule will facilitate the practical introduction of a correlated health curriculum into school systems. . . .

Available currently are 12 correlated visual packets for overhead projection use in classrooms covering a part of the curriculum, and teaching-learning guides for two of the curriculum's ten major organizing elements or concepts. These materials have been tested in 23 schools participating in the curriculum development in four tryout centers across the nation.

Extensive bibliographies, to accompany every phase of the forthcoming titles, will contain special references to student-oriented pamphlets, periodicals, books, and audio-visual materials, thereby utilizing the most recent advances in American teaching methods.



CP + T

*Newsletter**

Recent Advances in Analgesics

THE EFFECT OF MORPHINE-LIKE DRUGS on response to pain has been made clear by the recent work of Beecher¹ and others,² who have shown that in experimental pain in volunteers the *threshold* of pain perception is not altered. However, with steadily increasing pain (such as tourniquet pain or immersion of hands in ice water) the *tolerance* to pain rises markedly with morphine-like drugs. This is the analgesic effect of morphine and related drugs, and it is considered to be a psychic effect, not on the perception of pain but on the interpretation of a stimulus as "painful." With this psychic action morphine also dulls many "defense reactions," blocking not only pain but also the anxiety of air-hunger, as well as more normal autonomic responses: thirst, hunger, even urges for urination and defecation.

In alleviating psychic distress, morphine creates a state of euphoria in many individuals and this pleasurable state is primarily responsible for the addiction liability of morphine. Physical dependence and fear of withdrawal symptoms help maintain addiction but are probably not the main causes of addiction. New concepts of the psychic effects of analgesics and addiction are presently altering therapeutic approaches. Methadone (Amidon and other trade names), which is somewhat less euphoria-producing than morphine, is being tried in New York City by Dr. V. Dole to replace heroin in addicts. Methadone causes less "psychic insulation" to the body's general defense reactions, and individuals addicted to methadone are more functional in society than heroin addicts. Cyclozocine, a new analgesic, has been recommended for the same purpose.³

Nalorphine (Nalline) has been used for some years as an effective antagonist to overdoses of morphine. Nalorphine is also an analgesic but is not useful as such because it produces severe dysphoria in most individuals. The psychic reaction is sufficiently unpleasant so that many individuals will not continue to take the drug. However, recognition of the true analgesic effect of nalorphine was an important step in the realization that pleasurable psychic effects and therefore addiction liability may not be inextricably linked to morphine-like analgesia.

Recently, an analgesic has been released for use which has achieved a balance between euphoria and dysphoria.⁴ This drug is pentazocine (Talwin) and is available for intramuscular use (30-60 mg). It has morphine-like analgesic properties but its psychic effects are minimal and are not conducive to addiction. Pentazocine is therefore not under regulation as a narcotic. The drug was originally synthesized as a morphine antagonist, and it does possess this property. It may precipitate withdrawal symptoms in an addict or reverse the effects of other morphine-like analgesics. Although pentazocine represents a significant therapeutic advance the drug must be considered to be much like morphine except for addiction liability. One of the major side effects of pentazocine is respiratory depression. This effect on the respiratory center requires the same caution in use of pentazocine as morphine when depression of the respiratory center is contraindicated. Head injury with increased sensitivity to convulsions is also a contraindication for pentazocine.

Another new analgesic, methotrimeprazine (Levomprone), has contradicted the concept that analgesics which can control severe pain will all produce respiratory depression. Methotrimeprazine is a phenothiazine chemically related to chlorpromazine (Thorazine). Chlorpromazine itself has been used in com-

* Clinical Pharmacology & Toxicology Newsletter from the Clinical Pharmacology Study Unit and the Therapeutics and Pharmacy Committee, University of Kansas Medical Center.

bination with analgesics and has been reported to enhance the action of analgesics but is not an analgesic. Several careful clinical studies of methotrimeprazine have shown that it has true analgesic properties. It is useful in a variety of painful conditions including the pain of cancer.^{5, 6} Cross tolerance does not develop between methotrimeprazine and morphine-like compounds. The unique feature of methotrimeprazine is that it achieves a desirable level of analgesic action without as much respiratory depression as morphine and related opiates. Sedation is a common (and not always undesirable) side effect of methotrimeprazine. The usual dose for pain is 10-30 mg, i.m. The major serious side effect is orthostatic hypotension, resembling the cardiovascular effect of chlorpromazine. This side effect requires that the drug be used with caution in some circumstances.

Although both methotrimeprazine and pentazocine represent true therapeutic advances, they do not supplant morphine, with its remarkable psychic insulation, in all circumstances nor do they solve all the problems of serious side effects and tolerance to analgesics.

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* * *

Concomitant with the increase in the cost of quinine has been an increase in the use of procainamide (Pronestyl). We have noticed that the incidence of procainamide-induced lupus-like syndrome has also increased. The symptoms range from joint pain, malaise, or fever to full blown system lupus erythematosus including a positive LE test and elevated titers of serum antinuclear antibodies. Similar results were recently reported (*Am. J. Cardiol.* 20:367, 1967). All patients on long-term therapy with this drug should be carefully checked periodically for this complication.

Merry Christmas
and a
Happy New Year

THE JOURNAL OF THE
KANSAS MEDICAL SOCIETY

The President's Message

Dear Doctor:

One of the privileges of the presidency is to visit the councilor districts of the Society and discuss with you some of the problems we face in medicine.

This fall tour is an illuminating and heart warming experience. Though native born I have seen parts of the state for the first time. It is a great state, and we all should proclaim its advantages loud and clear.

May I express to you who have attended the district meetings my appreciation for your hospitality and courtesy to Mrs. Gsell and myself.

To all of you—a Merry Christmas, and continued good fortune for the coming year.



Sincerely,

A handwritten signature in dark ink, appearing to read "Leo H. Gsell". The signature is fluid and cursive.

President



Drugs—Judgment or Regulation?

As with many important issues today the subject of so-called "generic dispensing" is clouded with a great number of confusing and conflicting statements.

Generic prescribing is not new and has been an integral part of prescribing for many, many years. A drug usually has three names: a chemical name, which has significance primarily to the chemist and other scientists; a generic or public name, which is somewhat simpler and has greater understanding in pharmacology, medicine, and pharmacy; and a trade or brand name which conveys information as to the manufacturer of a particular product. Thus for particular generic drug entities there may exist different brand names, connoting a difference in the method of manufacture, controls at different levels of production, and a history of clinical performance characteristic of *that particular brand*.

A pharmaceutical product is more than a drug, and the care, skill and integrity employed in its manufacture may make all the difference in the performance of that product in a patient. There are those who would have us believe that all products containing the same generic drug are therapeutically identical but this is not true. The Commissioner of the Food and Drug Administration in recent testimony and speeches has clearly indicated that although he might like to give the assurance that all drug products are clinically equivalent, at this point in time he cannot honestly do so.

A great deal has been made of the fact that the government buys drugs under generic names only. However, if one examines the bid awards, one finds that an overwhelming majority of products are supplied by brand name manufacturers. In a recent speech, a representative of the Defense Personnel Support Center indicated, "Basically, our problem is this: chemically equivalent items are not necessarily stable, therapeutically equivalent products . . . 45 per cent of the pre-award samples submitted by the low bidder last year failed to pass our tests."

The truth of the matter is that the technology of understanding drug action, availability, absorption, excretion, binding, partition coefficient, solubility, enzymatic interaction and a host of other factors is still in its infancy. These are more than mere technical characteristics; they are determinants of therapeutic performance. Thus the history of *experience* by the physician and pharmacist and the integrity of the producer to produce drugs which result in consistently reproducible action is the most reliable guide available at this time. Any effort to remove the prescription decision from the physician and substitute some government constituted authority, is a dangerous proposal which could be detrimental to the health of the patient and a serious blow to high quality medical care in this country.

The number of products for which generic prescribing might result in savings for the patients represent less than 20 per cent of the total number of prescriptions dispensed annually. In some of these instances the real savings are relatively insignificant. The proposed savings that are supposedly available have been wholly exaggerated. In the majority of instances of generic prescriptions, it has been the policy of most pharmacists to dispense only those products which experience has shown to be therapeutically reliable—generally a branded product.

The physician, who has the ultimate responsibility for the treatment of the patient, should be constantly aware of the drug products *prescribed* and *dispensed* for his patients. He can on occasion, by consulting with his pharmacist, select products in which a degree of confidence can be assured with some cost savings resulting. However, an understanding of all parameters involved is essential. There have been too many instances where patients on maintenance therapy with such drugs as anticoagulants are hospitalized and products of different manufacture are supplied with disturbing and even life-threatening results.

Regardless of the advancement of our scientific

information, a great deal of the practice of medicine and of pharmacy involves the use of professional judgment. Any artificial barriers which interfere with the exercise of this judgment are unwise and dangerous. The physician should be free to prescribe the products which he deems best for his patients. Any changes in the medication should only come about after proper consultation between physician and pharmacist and only with the consent of the physician. Those who seek other approaches should make certain that they are fully aware of the consequences that may result and determine whether the risks involved are truly worth the savings. In the best interests of public health, we do not believe that they are!

Professional Courtesy

Adopted by Judicial Council, American Medical Association June 17, 1967.

The custom of professional courtesy embodies the ancient tradition of fraternalism among physicians in the art which they share, and their mutual concern to apply their learning for the benefit of one another as well as their patients. The Judicial Council reaffirms and endorses the principle of professional courtesy as a noble tradition that is adaptable to the changing scene of medical practice.

Professional courtesy is not a rule of conduct that is to be enforced under threat of penalty of any kind. It is the individual responsibility of the physician to determine for himself and within his own conscience to whom and the extent to which he shall allow a discount from his usual and customary fees for the professional services he renders, and to whom he shall render such services without charge as professional courtesy.

The following guidelines are offered as suggestions to aid physicians in resolving questions related to professional courtesy.

1. Where professional courtesy is offered by a physician but the recipient of services insists upon payment, the physician need not be embarrassed to accept a fee for his services.

2. Professional courtesy is a tradition that applies solely to the relationship that exists among physicians. If a physician or his dependents have insurance providing benefits for medical or surgical care, a physician who renders such service may accept the insurance benefits without violating the traditional ethical practice of physicians caring for the medical needs of colleagues and their dependents without charge.

3. In the situation where a physician is called upon to render services to other physicians or their im-

mediate families with such frequency as to involve a significant proportion of his professional time, or in cases of long-term extended treatment, fees may be charged on an adjusted basis so as not to impose an unreasonable burden upon the physician rendering services.

4. Professional courtesy should always be extended without qualification to the physician in financial hardship, and members of his immediate family who are dependent upon him.

HUNTERS—LOOK AGAIN BEFORE FIRING

This article is aimed directly at the hundreds of thousands of hunters who are taking to the fields and woods this fall in search of game—

Before you pull the trigger, know what you're firing at.

Sporting arms, from a single-shot .22 calibre rifle to a heavy big game weapon to a fast-shooting automatic scattergun, are designed to kill birds and animals. They also can kill or wound humans.

Each fall several hundred hunters return from fall outings via hearse. Thousands of others return with a load of bird shot or a rifle bullet to be dug out. Behind almost every hunting accident is one cause: carelessness. The hunter who blazes away at everything that moves runs a big risk of bagging a fellow hunter.

Never cross over or through a fence or climb a tree with a loaded gun. It might fall and discharge. Unload first and reload after crossing. Don't shoot at a hard, flat surface. Ricochetting bullets can carry long distances with killing power.

Even a small bore rifle has considerable range. Know where your bullet will stop before pulling the trigger.

Keep guns away from children. Never leave a weapon unattended without unloading it. Store guns and ammunition beyond reach of youngsters, preferably under lock and key.

Always carry a gun so that you can control the direction of the muzzle even if you stumble. Keep the safety catch on until ready to shoot. Always be sure the barrel is clear of obstructions. A barrel clogged with mud or snow may burst.

Guns and alcohol don't mix. If you like a nip around camp, wait until you're through hunting for the day and all weapons are unloaded and cased.

Treat guns with respect at all times. They may be loaded, despite all precautions. Thus never point a weapon at something unless you plan to shoot it.

KaMPAC*

The following creed was excerpted from the address presented by Dr. Blair Henningsgaard at the KaMPAC Workshop, November 5, 1967. The inspiration of these words was so impressive that we wanted to present them to the entire Society.

There are some who claim that physicians do not belong in politics, and should stay out of politics.

I disagree with them.

I look at it this way:

I am a free citizen in a free nation.

Diminish my freedom as an individual and you diminish the sum total of freedom in my country.

I am also a physician, free thus far to treat my patients to the best of my ability.

Abridge that freedom and the health of my patients is affected adversely.

These things being true, I cannot—I will not—stand idly by when these hard-won freedoms are under attack.

For I believe that the values upon which this country was founded are immutable.

I believe that change, only for the sake of change, cannot be defended; that change must be preceded by thought; that change must be weighed against the enduring principles which have guided us in our collective effort to win liberty and preserve it.

I believe that I, as a free citizen in a free land, am obliged to defend my beliefs in the ways permitted to me and required of me by our form of government.

Therefore, let no man seek to bar me from the political process; for it would be akin to denying my right to participate in the process which determines free government.

I am only one man, but there are countless others who feel as I do.

I am only one physician, but thousands of my colleagues are joined with me in the common cause of good government.

I have only a few hundred patients, but my profession has committed itself to the best health care it can provide 200 million Americans.

I believe that political action is not only essential to the socio-economics of medical practice but that it provides the first line of defense for our scientific efforts.

I *know* that the resources of our profession are formidable when brought to bear on the political process, whether those resources are measured in terms of leadership, dollars, talent, or dedication.

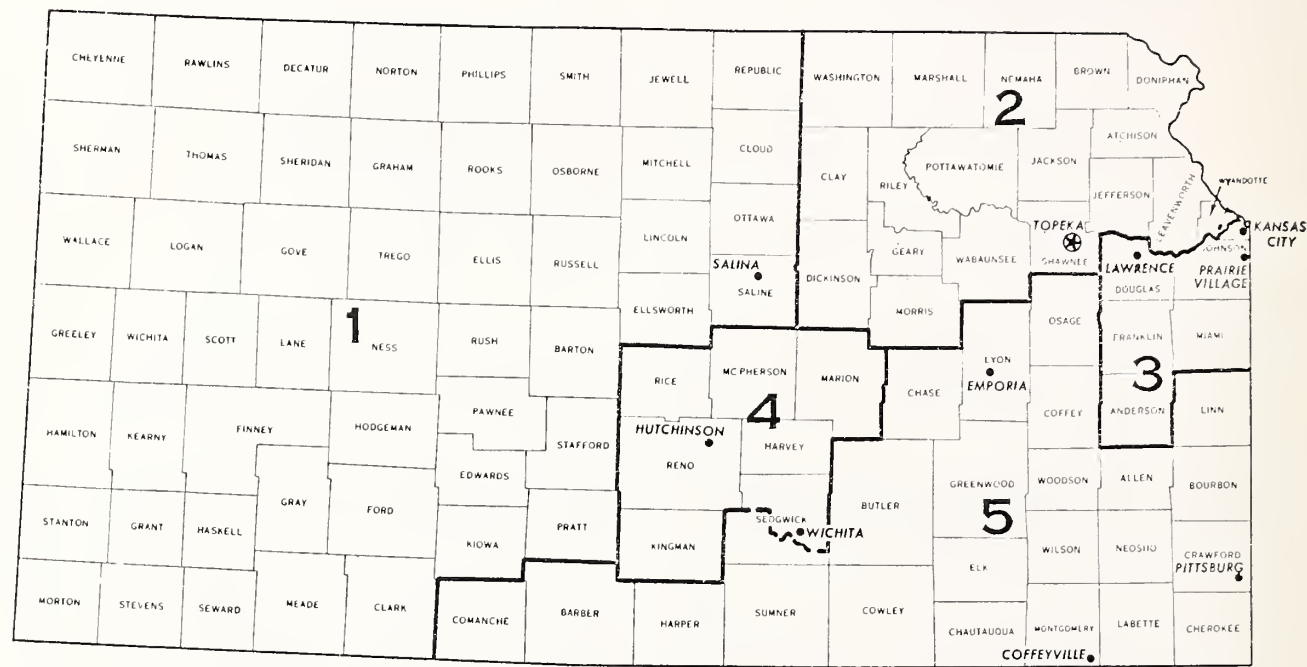
We have set foot upon this road because there is no other.

We shall travel it, come Hell or high water, with courage, with stamina, with good conscience.

We cannot, as responsible people, do otherwise.

* Kansas Medical Political Action Committee

Do You Know Your Congressmen?



Kansas Congressional Districts, 90th Congress

SENATORS

Frank Carlson (R) Concordia
New Senate Office Building Room 3227 (20510)
James Pearson (R) Prairie Village
New Senate Office Building Room 4327 (20510)

* * *

Listed below the names of the Senators and Representatives are their addresses in Washington, D. C. The zip codes are shown in parentheses.

REPRESENTATIVES

Robert Dole (R), Dist. 1 Russell
243 Cannon House Office Building (20515)
Chester L. Mize (R), Dist. 2 Atchison
1109 Longworth House Office Building (20515)
Larry Winn, Jr. (R), Dist. 3 Leawood
352 Cannon House Office Building (20515)
Garner E. Schriver (R), Dist. 4 Wichita
1511 Longworth House Office Building (20515)
Joe Skubitz (R), Dist. 5 Pittsburg
233 Cannon House Office Building (20515)

Writing Your Congressmen

Some suggested ground rules to follow:

1. Study the issues, form your opinion, inform your congressmen.
2. He should be addressed as Representative or Senator, not "mister."
3. Write *your own* Representative or Senator.
4. Letters to other congressmen are generally referred to your representative on the assumption that you didn't know who represented you in Congress.
5. Use your own words and your own style.
6. Be brief, but not terse.
7. Be specific, positive, don't hedge.
8. Be reasonable—don't ask the impossible.
9. Request an answer—you've told him your views, now ask him where he stands.
10. Be courteous, appreciative and thank him for good things he does.

To phone your Congressmen in Washington:

1. Dial or call Area Code 202 CA4-3121.
 2. Ask for Senators and Representatives by name and State.
-

SENATORS' COMMITTEES AND SUBCOMMITTEES

SENATOR FRANK CARLSON

Committee on Finance
Committee on Foreign Relations
Committee on Post Office and Civil Service
Joint Senate-House Committee on Internal Revenue
Taxation

SENATOR JAMES PEARSON

Committee on Armed Services
Committee on Commerce

REPRESENTATIVES' COMMITTEES AND SUBCOMMITTEES

REP. ROBERT DOLE (R)

1st District

Committee on Agriculture
Subc.—Livestock and Grains
Special Subc.—Conservation and Credit
Special Subc.—Departmental Oversight
Special Subc.—Foreign Agriculture Operations
Committee on Government Operations
Subc.—Foreign Operations and Government In-
formation
Subc.—Intergovernmental Relations

REP. CHESTER L. MIZE (R)

2nd District

Committee on Banking & Currency
Subc.—International Finance
Subc.—International Trade
Subc.—Small Business

REP. LARRY WINN, JR. (R)

3rd District

Committee on District of Columbia
Subc.—No. 1
Subc.—No. 2
Committee on Science and Astronautics
Subc.—Space Sciences and Applications

REP. GARNER E. SHRIVER (R)

4th District

Committee on Appropriations
Subc.—Foreign Operations
Subc.—Labor, Health, Education and Welfare and
Related Agencies

REP. JOE SKUBITZ (R)

5th District

Committee on Interior and Insular Affairs
Subc.—Irrigation and Reclamation
Subc.—Mines and Mining
Subc.—National Parks
Committee on Public Works
Subc.—Flood Control
Subc.—Watershed Development
Special Sub.—Economic Development Programs



Personalities—IN KANSAS MEDICINE

A Glaucoma Clinic, sponsored by the Business and Professional Women's Club, was held in Anthony in October. Conducting the clinic were James M. Hill, Arkansas City; Karl Stock, Topeka; P. M. Hulett and B. L. Gardner, both of Anthony; and Ralph E. Bellar, Harper.

In October, the Scott City Clinic hosted an open house honoring **H. Preston Palmer** on his 70th birthday.

George E. Burket, Jr., Kingman, addressed the delegates to the 17th annual meeting of the Kansas Academy of General Practice, held recently in Wichita. New officers of the Kansas Chapter, elected during the meeting, are: **Ben W. Barker**, Wichita, president; **Kenneth Lohmeyer**, Emporia, president-elect; **Donald Goering**, Salina, vice-president; and **E. J. Chaney**, Belleville, secretary.

Walter Menninger, Topeka, was the guest speaker at a banquet of the District I meeting of the Soroptimist Federation of Americas, Inc., held in Topeka in October.

The annual election of the Scott County hospital medical staff was held in October. Officers elected for 1968 are **Galen W. Fields**, president; **H. Preston Palmer**, vice-president; and **B. Morrison Hopkins, Jr.**, secretary-treasurer. All are from Scott City.

J. F. McDonnell, Caldwell, has been appointed city health officer by the Caldwell City Commission.

The community of Galena honored **Frank James** last month for his many years of service to Galena and the area.

Ministers and doctors from several northwest Kansas communities attended a conference dealing with the subject of the critically ill person in October. The

conference, held in Colby, was sponsored by the committee on Relations with Religion of the Northwest Kansas Medical Society, in cooperation with the K.U. Extension Service. Among those participating in the program were **Merlynn Colip**, Norton; **Asher W. Dahl**, Colby, and **James J. Marchbanks**, Oakley.

Lee E. Fent, Newton, was elected to the national Board of Directors of the American Cancer Society, at the annual meeting held in New York in October.

Guy W. Cramer, Parsons, has received notification of his election to fellowship in the International College of Surgeons.

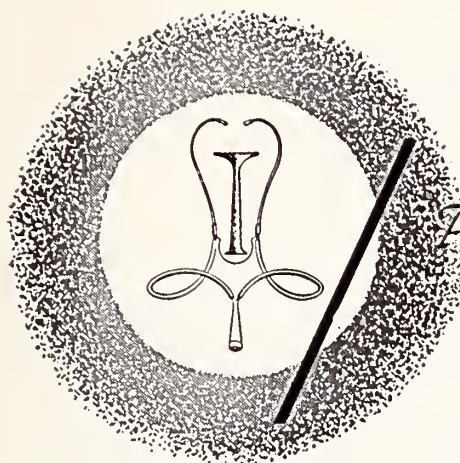
Robert Switzer and **Patricia Schloesser**, both of Topeka, spoke at the opening meeting of the Kansas Association for Mental Health. Others participating in the meeting, which was held in Wichita, included **Karl Menninger**, Jackson Day and **Evalyn Gendel**, all of Topeka; **Paul Laybourne**, Kansas City; **Richard Dreher**, Salina; and **Dean Stucky**, Wichita.

Millard Schulz, Russell, received the Silver Beaver Award of the Coronado Council of Boy Scouts of America in a formal ceremony held at Fort Hays State College in October. Dr. Schulz had previously received an award for outstanding leadership and dedicated service to scouting.

Robert C. McCullough has moved from Everest to Goodland, where he is now in practice with **E. C. McCormick**.

Free Diagnostic Clinics for Crippled Children of Labette and Norton counties were held recently in Parsons and Norton. **Leonard F. Peltier** and **Philip C. Nohe**, Kansas City, and **John F. Lance, Jr.**, Wichita, conducted the Labette County Clinic at

(Continued on page 480)



Announcements

Professional meetings, conferences, and postgraduate courses of national importance are listed for the Doctor's Calendar. Notice of the session is posted in advance to allow the physician time to make preparations.

1968

JANUARY

- Jan. 11-13 First Internal Conference on Prematurity, sponsored by the AMA committee on Maternal and Child Care, Ft. Lauderdale, Florida. For information write Wesley J. Duiker, Secretary, Committee on Maternal and Child Care, AMA, 535 N. Dearborn, Chicago 60610.
- Jan. 14-18 Society for Cryo-Ophthalmology, Miami Beach. Contact: Dr. John G. Bellows, Secretary, 30 N. Michigan, Chicago 60602.
- Jan. 19-20 13th interim scientific session, American Rheumatism Association, sponsored by the Arthritis Foundation. Sheraton-Belvedere Hotel, Baltimore. Write: Miss Margaret M. Walsh, 1212 Avenue of the Americas, New York City 10036.
- Jan. 25-27 Midwinter Cancer Seminar, sponsored by the American Cancer Society, Colorado Division, Vail, Colorado.
- Jan. 19-20 New Concepts in Problems of Completed Stroke, presented by the American Rehabilitation Foundation. 16 hours credit, AAGP approved. Write: Thomas P. Anderson, M.D., Kenney Rehabilitation Institute, 1800 Chicago Ave., Minneapolis 55404.

POSTGRADUATE COURSES

University of Colorado:

- Jan. 14 *Iatrogenic Illness*
- Jan. 14-20 *Annual General Practice Review*
- Feb. 5-9 *High Risk Infant Care*
- Feb. 20-23 *Surgery of the Hand*

For further information, write the Office of Postgraduate Medical Education, University of Colorado School of Medicine, 4200 E. Ninth Avenue, Denver 80220.

University of Kansas:

- Feb. 14 *The Mentally Handicapped Child (Great Bend, Kansas)*
- Feb. 19-20 *Natural History of Congenital and Rheumatic Heart Disease*

For further information write the Department of Postgraduate Medical Education, University of Kansas School of Medicine, 39th and Rainbow Boulevard, Kansas City, Kansas 66103.

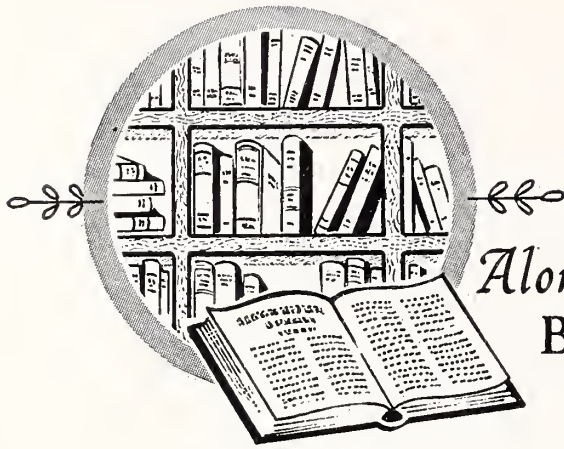
University of Nebraska:

- Jan. 18-19 *Kidney Diseases*
- Feb. 5-7 *Closed Chest Cardiac Resuscitation*
- Feb. 22-23 *Office Procedures for the General Physician*

For further information write the Department for Continuing Education, University of Nebraska College of Medicine, Omaha.

- Jan. 10-12 An intensive program on *Current Concepts in Cardiology*, with emphasis on coronary disease, indication and management of valvular replacement, diagnosis and management of cardiac arrhythmias, vectorcardiography and applied cardiovascular physiology is being offered by the Institute for Cardiovascular Diseases, Good Samaritan Hospital, Phoenix, Arizona. For information write: Mr. William B. Nelligan, Executive Director, American College of Cardiology, 9650 Rockville Pike, Washington, D. C. 20015.

(Continued on page 480)



Along The BOOKSHELF

Clendening Medical Library

RECENT ACQUISITIONS

- Alexander, Edythe Louise. Care of the patient in surgery. Mosby, 1967.
- Ambrose, Edmund Jack. The biology of cancer. Van Nostrand, 1966.
- Anderson, William Ferguson. Practical management of the elderly. Blackwell Scientific, 1967.
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- Strauss, Herbert S. Diagnosis and treatment of hemophilia. . . . Children's Hospital Medical Center, 1967.
- Talbott, John Harold. Gout. Grune & Stratton, 1967.
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KANSAS STATE DEPARTMENT OF HEALTH

TOPEKA, KANSAS

Division of Preventable Diseases—Division of Vital Statistics—Kansas Morbidity Incidence
Summary of Cases Reported in August, 1967 and 1966

<i>Diseases</i>	<i>August</i>			<i>January-August Inclusive</i>		
	1967	1966	<i>5-Year Median 1963-1967</i>	1967	1966	<i>5-Year Median 1963-1967</i>
Amebiasis	1	2	1	12	8	12
Aseptic meningitis	—	1	—	1	1	1
Brucellosis	—	4	—	—	7	3
Diphtheria	—	—	—	—	—	—
Encephalitis, prim., infect.	7	9	7	12	11	12
Encephalitis, post-infect.	—	—	*	2	—	*
Gonorrhea	307	260	264	2,616	2,013	2,013
Hepatitis, infectious	25	13	20	136	123	172
Meningococcal meningitis	—	3	—	7	13	11
Pertussis	2	—	2	7	11	12
Poliomyelitis	1	—	—	2	—	—
Rheumatic fever	—	—	—	2	—	2
Salmonellosis	15	52	31	136	173	173
Scarlet fever	—	6	—	52	83	65
Shigellosis	2	8	8	24	49	49
Streptococcal infections	296	149	112	1,999	1,712	1,712
Syphilis	112	109	70	792	800	731
Tinea capitis	3	4	4	44	30	44
Tuberculosis	28	17	21	164	200	179
Tularemia	1	—	—	11	—	4
Typhoid fever	—	3	—	1	5	1

* Statistics for five-year median not available.

**DIAGNOSTIC PROCEDURES
RECOMMENDED IN THE CARE OF
PRENATAL PATIENTS EXPOSED TO
RUBELLA OR WITH RUBELLA-LIKE
SYMPTOMS**

If a woman in the first trimester of pregnancy develops a rubella (German measles) infection either clinical or inapparent, there is a considerable risk that her child may be born with serious physical defects. Once such maternal infection occurs, nothing can be done to prevent infection of the fetus with possible sequelae due to congenital rubella. Some authorities recommend interruption of pregnancy up to 14 weeks gestation in prenatal cases with confirmed rubella.

There are available laboratory examinations which may aid the physician in choosing a course of treatment when his prenatal patient presents with suspicious signs and symptoms of rubella or gives a history of exposure to a case of the disease. These tests, if timely done, can determine if the recent exposure induces rubella infection or if the patient is immune from a previous infection. History of prior rubella is

practically worthless in the absence of laboratory confirmation of diagnosis.

Collection of Specimens

1. Laboratory serologic tests on two blood specimens taken at different times are necessary.
 - (a) The first specimen must be collected as soon as possible after exposure or after the patient has shown symptoms suspicious of rubella, preferably within two or three days.
 - (b) The second specimen should be collected 14-21 days after the first.
2. Seven or 8 ml. of blood are drawn in the usual sterile blood tube and either the serum or the whole blood without preservative sent promptly to the State Public Health Laboratories, Route 4, Topeka.

**Interpretation of Laboratory Results and
Suggested Care of the Patient**

- A. If the HI titer of the first blood is less than 1:8 (<1:8), the result is to be interpreted as an ab-

sence of rubella antibodies. It is evident that the woman has no protection against rubella. One of two courses may be followed by the physician:

1. Wait 14 to 21 days and take a second specimen of blood.
 - (a) If the HI titer of the second blood remains less than 1:8 ($<1:8$), the suspected exposure has not resulted in rubella infection and/or the rubella-like illness was not rubella.
 - (b) If the HI titer of the second blood is greater than 1:8 ($>1:8$), this is evidence of active rubella infection and nothing can be done to prevent possible congenital rubella in the fetus.
 2. Gamma globulin (20 ml.) IM may be administered as a preventative provided it is given within seven days of exposure. The effectiveness of gamma globulin in preventing congenital rubella is not known. It may merely serve to mask clinical evidence of infection. A second blood should be examined 21 days after gamma globulin is given to detect possible rubella infection. If the second blood shows a four fold rise in HI titer, this is proof that infection has taken place. In this situation nothing can be done to prevent congenital rubella.
- B. *If the HI titer of the first blood is 1:8 or greater*, this is evidence of rubella infection before the blood was drawn. It is possible that this infection was still active at the time the blood was drawn. A second blood specimen should be taken 14 to 21 days after the first and both specimens (paired sera) examined simultaneously for HI antibodies.
1. If the second specimen shows no significant rise (four-fold or more) in HI antibody titer, this is evidence that the rubella infection was probably terminated before the first blood was drawn. If the HI titer is very high (1:1024 or greater), it is likely that the infection was recent. A clinical history though not always dependable may help to determine if such infection occurred during pregnancy.

2. If the second blood shows a four-fold or greater rise in HI titer, this is evidence of infection which was active when the first blood was drawn. Nothing can be done to prevent possible fetal damage from rubella.

Conclusion

Until such time as a dependable vaccine against rubella becomes available, the prevention of congenital rubella depends upon the dubious effectiveness of gamma globulin or the interruption of pregnancy. Neither of these procedures should be instituted until the immunity status of the patient is determined by carrying out the rubella serology suggested above.

Personalities

(Continued from page 476)

Parsons. Earl V. Carlson, Hays, was in charge of the clinic at Norton.

Mario Borra, Hutchinson; Pratt Irby, Fort Scott; and Robert Weltmer, Beloit, attended the 46th annual meeting of the South Central Section of the American Urological Association in October. The meeting was held in Kansas City.

Announcements

(Continued from page 477)

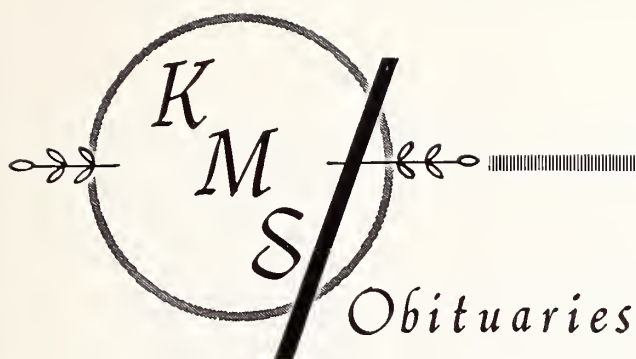
Jan. 17-19

Symposium on Nuclear Medicine, St. Louis. Faculty to be comprised of staff of the Mallinckrodt Institute of Radiology, Washington University Medical School and 15 visiting lecturers. The symposium will be composed of two parts: Introduction to Nuclear Medicine and Progress in Nuclear Medicine. For information write E. James Pothchen, M.D., Director, Nuclear Medicine, Washington University School of Medicine, St. Louis 63110.

CHANGE OF ADDRESS

Please notify the Kansas Medical Society
of any changes in address

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WINIFRED V. WOOSTER, M.D.

Dr. Winifred V. Wooster, 76, Minneapolis, died on October 25, 1967, at Asbury Hospital.

She was born June 13, 1891, at Wauseon, Ohio. She received her medical degree at Kansas College of Medicine in Topeka and began her practice in Minneapolis in 1912. Dr. Wooster practiced medicine in Minneapolis for more than 50 years and was the only woman in the United States to be a county coroner. She also served as county health officer and was a member of the American Medical Association's "50-Year Club."

Dr. Wooster is survived by her husband.

FRED C. YOUNG, M.D.

Dr. Fred C. Young, Mission, died on October 23, 1967, at Bethany Hospital in Kansas City. He was 58 years old.

Dr. Young was born in Kansas City on September 19, 1909, and lived there most of his life. He graduated from the University of Arkansas School of Medicine in 1942 and interned at Research Hospital, Kansas City, Missouri. During World War II, Dr. Young served as a radiologist with the Army Medical Corps in Europe. He was a member of the staffs of Bethany and Trinity Lutheran hospitals.

Survivors include his wife and two daughters.

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